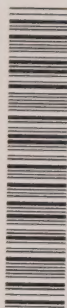


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# ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: 387

DATE: Monday, June 22, 1992

BEFORE:

A. KOVEN Chairman

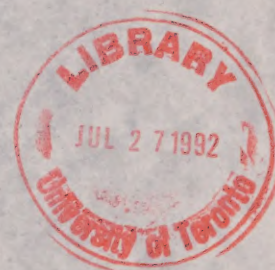
E. MARTEL Member

FOR HEARING UPDATES CALL (COLLECT CALLS ACCEPTED) (416)963-1249

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# ENVIRONMENTAL ASSESSMENT BOARD

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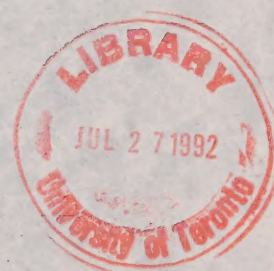
E. MARTEL Member

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2300 Yonge St., Suite 709, Toronto, Canada M4P 1E4









HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL  
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR  
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental  
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental  
Assessment for Timber Management on Crown  
Lands in Ontario;

- and -

IN THE MATTER of a Notice by The Honourable  
Jim Bradley, Minister of the Environment,  
requiring the Environmental Assessment  
Board to hold a hearing with respect to a  
Class Environmental Assessment (No.  
NR-AA-30) of an undertaking by the Ministry  
of Natural Resources for the activity of  
Timber Management on Crown Lands in  
Ontario.

-----  
Hearing held at the Civic Square, Council  
Chambers, Sudbury, Ontario on Monday,  
June 22, 1992, commencing at 8:30 a.m.

-----  
VOLUME 387

BEFORE:

MRS. ANNE KOVEN  
MR. ELIE MARTEL

Chairman  
Member







A P P E A R A N C E S

MR. V. FREIDIN, Q.C.	)	MINISTRY OF NATURAL
MS. C. BLASTORAH	)	RESOURCES
MS. K. MURPHY	)	
MR. B. CAMPBELL	)	
MS. J. SEABORN	)	MINISTRY OF ENVIRONMENT
MS. N. GILLESPIE	)	
MR. R. TUER, Q.C.	)	ONTARIO FOREST INDUSTRY
MR. R. COSMAN	)	ASSOCIATION and ONTARIO
MS. E. CRONK	)	LUMBER MANUFACTURERS'
MR. P.R. CASSIDY	)	ASSOCIATION
MR. D. HUNT	)	
MR. R. BERAM		ENVIRONMENTAL ASSESSMENT BOARD
MR. J.E. HANNA	)	ONTARIO FEDERATION
DR. T. QUINNEY	)	OF ANGLERS & HUNTERS
MR. D. O'LEARY		
MR. D. HUNTER	)	NISHNAWBE-ASKI NATION
MR. M. BAEDER	)	and WINDIGO TRIBAL COUNCIL
MS. M. SWENARCHUK	)	FORESTS FOR TOMORROW
MR. R. LINDGREN	)	
MR. D. COLBORNE	)	GRAND COUNCIL TREATY #3
MR. G. KAKEWAY	)	
MR. J. IRWIN		ONTARIO METIS & ABORIGINAL ASSOCIATION
MS. M. HALL		KIMBERLY-CLARK OF CANADA LIMITED and SPRUCE FALLS POWER & PAPER COMPANY





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MR. Y. GERVAIS	)	ONTARIO TRAPPERS
MR. R. BARNES	)	ASSOCIATION
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MS. B. LLOYD	)	
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MR. D. SCOTT	)	NORTHWESTERN ONTARIO
MR. J.S. TAYLOR	)	ASSOCIATED CHAMBERS OF COMMERCE
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MR. D. KING		VENTURE TOURISM ASSOCIATION OF ONTARIO
MR. H. GRAHAM		CANADIAN INSTITUTE OF FORESTRY (CENTRAL ONTARIO SECTION)
MR. G.J. KINLIN		DEPARTMENT OF JUSTICE
MR. S.J. STEPINAC		MINISTRY OF NORTHERN DEVELOPMENT & MINES
MR. M. COATES		ONTARIO FORESTRY ASSOCIATION
MR. P. ODORIZZI		BEARDMORE-LAKE NIPIGON WATCHDOG SOCIETY







APPEARANCES (Cont'd):

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MR. M.O. EDWARDS	FORT FRANCES CHAMBER OF COMMERCE
MR. P.D. McCUTCHEON	GEORGE NIXON
MR. C. BRUNETTA	NORTHWESTERN ONTARIO TOURISM ASSOCIATION





I N D E X   O F   P R O C E E D I N G S

<u>Witness:</u>	<u>Page No.</u>
<u>FRANK KENNEDY,</u> <u>JOHN McNICOL</u> ; Resumed.	66594
Cross-Examination by Ms. Gillespie	66594
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<u>JOHN McNICOL,</u> <u>FRANK KENNEDY</u> , Resumed. <u>KEN ABRAHAM,</u> <u>RON WAITO</u> ; Recalled.	66636
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I N D E X   O F   E X H I B I T S

<u>Exhibit No.</u>	<u>Description</u>	<u>Page No.</u>
2258	Minister of Natural Resources Reply Statement of Evidence No. 2.	66632
2259	Package of interrogatory answers from the Ministry of Natural Resources to interrogatories served by the Ministry of the Environment and Forests for Tomorrow.	66635
2260	Package of interrogatories in relation to MNR Reply, Panel 5.	66634
2261	Letter dated June 1, 1992 providing the curricula vitae for Dr. Robert Steedman and Mr. Paul Ward.	66634
2262	Curricula vitae for Brian Callaghan.	66635
2263	Package of overheads entitled Fire History in Ontario.	66648
2264	Package of 12 pages with covering sheet entitled, Clearcut Silvicultural System: Current Practice and Environmental Guidelines for Timber Management.	66671
2265	Document entitled Clearcut Silvicultural System: Silvicultural Costs & Effectiveness for Wood Supply.	66709





1       ---Upon commencing at 8:30 a.m.

2                   MADAM CHAIR: Good morning ladies and  
3 gentlemen. Welcome back to Sudbury.

4                   Mr. McNicol, we will start whenever you  
5 are ready.

6                   MR. McNICOL: Madam Chair, Mr. Kennedy  
7 has just gone back to get a box of material that he  
8 feels is necessary. He left a few minutes ago, so he  
9 should be back presently.

10                  MADAM CHAIR: All right. Thank you, Mr.  
11 McNicol.

12                  Good morning, Mr. Kennedy. Whenever you  
13 are ready we can get started.

14                   FRANK KENNEDY,  
15                   JOHN McNICOL; Resumed.

16       CROSS-EXAMINATION BY MS. GILLESPIE:

17                  Q. I just had a few questions to start  
18 with about the local citizens committee, and I wanted  
19 to ask you about the membership of that committee, and  
20 I understand from your evidence a week and a half ago  
21 that the membership is intended to reflect a variety of  
22 public interests; is that correct?

23                  MR. KENNEDY: A. Yes, it is.

24                  Q. And that you list a number of those  
25 interested in attending but that it is not intended to

1 be an exclusive list?

2 A. That is correct.

3 Q. And with respect to the item in  
4 Appendix 1 referred to as the general public, I  
5 understood your evidence to be that general public in  
6 that list refers to an individual who is not affiliated  
7 with a specific special interest?

8 A. That's correct. That provision is  
9 there to allow for that kind of an individual to be  
10 appointed to the committee.

11 Q. And the reference to general public  
12 in the list is not intended to suggest that that  
13 individual in some way represents the general public as  
14 a whole?

15 A. No, I think it would be pretty hard  
16 pressed to make that suggestion simply to provide  
17 someone who is not representative of the other  
18 interests that are listed here and to indeed appoint  
19 someone who could speak on their own behalf and be a  
20 proxy, if you will, in a sense, for the rest of the  
21 general public people.

22 Q. So you are suggesting that they are a  
23 proxy for the rest of the general public, or are they  
24 speaking on their own behalf and there is some interest  
25 in the timber management?



1 A. Speaking on their own behalf.

2 Q. And would you agree that all of the  
3 potential interests of the general public can never be  
4 represented on a committee, Mr. Kennedy?

5 A. Yes, I would agree with that.

6 Q. And there are really very practical  
7 limitations to how fully the local citizens' committee  
8 can be representative of the general public; is that  
9 correct?

10 A. Yes, just as in any democratic type  
11 arrangement, it is very difficult to ensure that you  
12 have representation that will effect everyone's  
13 interest so, yes, this individual is intended to be  
14 there to represent their own interest and there may  
15 well be other interests that are not present on the  
16 committee.

17 Q. So in that sense, the local citizens'  
18 committee can't replace a need for general public  
19 information, consultation and involvement in the timber  
20 management process?

21 A. Yes, that's correct.

22 Q. And that is why you have the public  
23 notice and information centres that are provided for in  
24 your proposal?

25 A. Yes. In addition to the information

1 centres, of course, we have the direct mailings to  
2 those individuals who come forward and declared that  
3 they are interested, either directly interested in the  
4 outcome or interested in just keeping up to date with  
5 what stage the planning process is at. But throughout  
6 the four stages of consultation, there are  
7 opportunities for the public to be involved in the  
8 process.

9 Q. So you would agree that there is no  
10 intention that the local citizens' committee would  
11 replace all of the need for general public  
12 consultation, which is built into the process?

13 A. I would agree with that. Our terms  
14 and conditions do reflect that.

15 Q. I would like to ask you some  
16 questions about your overhead, which is Exhibit 2255,  
17 and specifically page 18, which is the public  
18 consultation process proposal.

19 I understand from your evidence earlier,  
20 that the first stage is the eligibility criteria and  
21 that the next stage is to create eligibility maps which  
22 show all areas that meet the eligibility criteria; is  
23 that correct?

24 A. In terms of staging, that those two  
25 items would occur at the same time. Both the



1 determination of eligibility criteria and the  
2 preparation of eligibility maps and selection criteria,  
3 the next point on page 18 of that exhibit, would all be  
4 done prior to going to the personal consultation stage  
5 1, the notification.

6 Q. Okay. There may be some sequence  
7 involved, but they are all in the formal pre-stage 1  
8 part of the process?

9 A. That's correct.

10 Q. And the first information centre  
11 occurs at stage 2 of the process; is that correct?

12 A. Yes, that's correct.

13 Q. And at the time of the first  
14 information centre, the area selected for operations  
15 have been, and I believe you used the word earlier,  
16 already determined, Mr. Kennedy?

17 A. At the time of the first information  
18 centre there would be available, as the first slide  
19 indicates, preliminary areas selected for operations.

20 Q. So the areas have been selected?

21 A. The preliminary areas, yes, have been  
22 selected.

23 Q. And there are no options shown at the  
24 first information stage for areas of operation;  
25 correct?

1                   A. Not correct totally. For areas of  
2 concern prescriptions and for road corridors, there  
3 would be options showing, but for the balance of the  
4 activities there would not be options showing.

5                   Q. So for harvest there are no options  
6 showing?

7                   A. That's correct.

8                   Q. And as you stated, there are  
9 alternatives at the first information centre for areas  
10 of concern prescriptions and road locations?

11                  A. Yes, I did. That's correct.

12                  Q. And the advantages and disadvantages  
13 of area of concern prescriptions and road alternatives  
14 are analyzed and presented at that first information  
15 centre?

16                  A. Yes, that's correct.

17                  Q. And I believe you also stated that  
18 there is no designation of preferred area of concern  
19 prescriptions and road alternatives at that centre?

20                  A. At that time, that's correct.

21                  Q. The purpose of presenting  
22 alternatives to the public at the first information  
23 centre is in order for them to have an opportunity to  
24 comment and participate in the decision making process;  
25 is that correct?



1                   A. Yes, it is. During our last round of  
2 negotiations, several parties suggested that MNR drop  
3 its previous proposal which dealt with preferred  
4 alternatives at the first information centre, and  
5 instead, to provide the detailed information on the  
6 advantages and disadvantages to solicit public input  
7 and to get their input before making any further  
8 recommendations as to what would constitute the best  
9 benefit for the preferred alternative.

10                   Q. And I take it that the public input  
11 that you receive as a result of the first information  
12 centre is considered before you select the area of  
13 concern prescription and the road location from the  
14 alternatives; is that correct?

15                   A. Yes, it is correct. In this case, of  
16 course, we are dealing with values or areas of lasting  
17 influence to the roads and their input is solicited  
18 prior to the final selection, final recommendations, to  
19 the appropriate prescription.

20                   Q. But in contrast with respect to  
21 harvest areas, the decision has been made before the  
22 first public consultation stage and no options are  
23 presented to the public; is that correct?

24                   A. In the case of harvest, there has  
25 been the opportunity to comment on selection criteria

1 prior to the area selected for operations maps being  
2 prepared in the preliminary form. That is stage 1.  
3 And then, yes, from that point on you are correct,  
4 there are not alternatives presented for items such as  
5 harvest.

6 Q. Did you say there is an opportunity  
7 to comment prior to the areas selected for operations  
8 maps? When would that be?

9 A. That takes place in the form of the  
10 selection criteria, in that people have an opportunity  
11 to look at the criteria which will be used, to select  
12 the areas for operations in the preliminary form for  
13 the map that's presented at the first information  
14 centre.

15 Q. But that is after you have already  
16 selected areas for operations, isn't it?

17 A. No. This is the criteria by which  
18 you would identify the operations. Sorry, the areas  
19 for operations in the selection process.

20 Q. Well, maybe I have misunderstood, but  
21 I thought area selected for operations was presented at  
22 the same time as the selection criteria at the first  
23 information centre?

24 A. I believe you are mistaken. As our  
25 overhead attempts to illustrate, that is page 18 of

1 Exhibit 2255, that the public consultation, stage 1, is  
2 occurring after the selection criteria has been  
3 prepared and has been available for public review and  
4 comment, and it is on the basis of that selection  
5 criteria that the planning team prepares the areas  
6 selected for operations maps in preliminary form for  
7 use at the information stage.

8 Q. But that is before the first  
9 information centre, isn't it?

10 A. Could you rephrase that question?

11 Q. I asked you whether or not the  
12 selection criteria, when you say it is available for  
13 comment, you are talking about prior to the information  
14 centre; is that correct?

15 A. Yes, and it is also available at the  
16 time of the issuance of the first notice, the  
17 invitation to participate at stage 1.

18 It can be very difficult sometimes in  
19 between stage 1 and the first information centre in  
20 understanding it.

21 The selection criteria is prepared at the  
22 outset of the planning process and is available for  
23 public comment at the time of issuing the notice of  
24 invitation to participate, which we refer to as stage  
25 1.



1                   Subsequently to, or at that time, there  
2                   is an opportunity for publics to come forward and to  
3                   provide comment on those criteria and there is, of  
4                   course, the involvement of the local citizens'  
5                   committee throughout that process as well.

6                   Upon the conclusion of the selection  
7                   criteria, the area subject for operations map are  
8                   prepared in the preliminary form, along with the  
9                   anticipated areas of operations, along -- sorry, with  
10                  those anticipated areas of operations that are road and  
11                  AOC prescriptions, and when those are completed they  
12                  will go forward at part of stage 2, and that is at the  
13                  time of the first information centre.

14                  Q.   So when you say that selection  
15                  criteria can be commented on stage 1, you are talking  
16                  about if a member of the public goes to MNR and asks to  
17                  see them; is that correct?

18                  A.   Saying that if a member of the public  
19                  either saw in one of the several direct notices mailed  
20                  to them, as an individual, or if they had seen a  
21                  notification in one of the general media, that they  
22                  would have an opportunity to come forward and express  
23                  some interest into that kind of information and be  
24                  given a copy.

25                  MR. MARTEL:   What you are really arguing

1 is that there is really no formal opportunity to make a  
2 presentation as one would have at the information  
3 centre.

4 MS. GILLESPIE: Well, I think what Mr.  
5 Kennedy is saying is that selection criteria are  
6 available at the MNR if somebody from the public goes  
7 and asks to see them and comments on them, but I  
8 believe that the first time they are seen at an  
9 information centre is after the areas of operation have  
10 been selected.

11 Q. Am I correct, Mr. Kennedy?

12 MR. KENNEDY: A. The flavour of your  
13 answer is correct, I would say. I wouldn't agree with  
14 you totally in that there is still involvement in the  
15 local citizens' committee at that stage.

16 As we discussed just a few moments ago,  
17 they are a representation of a cross-section of  
18 publics, including an individual who we would refer to  
19 as general public.

20 So in that sense there is some  
21 involvement from people who are representative of the  
22 various stakeholder groups or interest groups that are  
23 likely to participate further throughout the planning  
24 process. In that sense there has been an opportunity.

25 Q. Do you intend to present options or

1 alternatives to areas for operations to the local  
2 citizens committee?

3 A. You are referring now to harvest  
4 areas?

5 Q. Yes, I am.

6 A. I would have to say no we do not, and  
7 I would also remind you that there are local citizens'  
8 committee is involved throughout the entire process.  
9 There is a representative there as a full member of the  
10 planning team.

11 So it is not a matter of presenting  
12 options to them. We provide the opportunity for them  
13 to be directly involved in the development of the  
14 selection criteria and their application, choosing from  
15 the eligibility map, planning selection criteria to  
16 determine which preliminary areas of operations would  
17 proceed to the next stage to the whole information  
18 centre style public consultation process.

19 Q. But will the local citizens'  
20 committee be presented with -- you said they will not  
21 be presented with options to consider for areas for  
22 operations.

23 The members sitting on the planning team  
24 may be involved in flying the criteria, but would the  
25 local citizens' committee simply be in a position of



1       commenting on areas selected for operations?

2               A. Well, the members sitting on the  
3       planning team, and those members that choose to come  
4       forward and act as observers at the planning team  
5       meetings, would have an opportunity to view first-hand  
6       the development of those criteria and the map.

7               The local citizens' committee is involved  
8       in determining what additional public consultation  
9       opportunities are desirable for that particular  
10      management unit. They are also involved in the set-up,  
11      if you will, and attendance at the information centre  
12      and through that process they are intimately involved  
13      in the area selected for operations map preparation.

14              Q. And as I understand this proposal,  
15      between the first and second information centres, the  
16      preferred area of concern prescription and road  
17      location is selected with the benefit of public input  
18      from the alternatives presented at the first  
19      information centre; is that correct, Mr. Kennedy?

20              A. That would be correct, as well as  
21      there is a possibility that other alternatives might  
22      come forward as a result of the public input, either  
23      directly by a member of the public making the  
24      recommendation about a specific prescription, or as a  
25      result of a concern being raised which hadn't otherwise

1       been thought of and the planning team reacting to that  
2       concern by proposing yet another alternative in the  
3       draft plan as it responds to that concern as raised  
4       earlier.

5                   Q.   You mean the selections are shown at  
6       the second information centre in the draft plan; is  
7       that correct?

8                   A.   Yes, that's correct.

9                   Q.   And with respect to harvest areas of  
10      option, however, the second information centre seems to  
11      be basically a repetition of the first information  
12      centre after, I believe you referred to, fine tuning;  
13      is that correct?

14                  A.   Yes, I did refer to fine tuning. It  
15      is repetitious in the nature that yes, you are working  
16      towards preparing one timber management plan, and as  
17      such you would be logical to see the areas for each of  
18      the activities to come forward and to be fine tuned in  
19      the sense of pieces of -- which pieces of geography  
20      operations will proceed on for the five years as well  
21      as the fine tuning of prescriptions. It's what I  
22      described before, the actual selection of the  
23      prescription based on that public input and all other  
24      information that has come forward at that time, as well  
25      as the necessary updating of information that is going

1 to occur over a process that is taking now  
2 approximately two years. So, yes, it is fine tuning of  
3 that information.

4 Q. Well, with respect to an area of  
5 concern prescriptions and road locations, you move from  
6 a selection of options in the first information centre  
7 and narrow that down to an actual decision in the  
8 second information centre. But with respect to harvest  
9 you have the selected areas of operation in both the  
10 first and the second information centers; is that  
11 correct?

12 A. In the first information centre those  
13 maps are prepared in their preliminary form in order to  
14 gain public input, to give public something to react  
15 to, if you will. On the basis of that they are  
16 reviewed then by the planning team and the local  
17 citizens' committee. They are then, I said fine  
18 tuning. I still think that's a good word to describe  
19 the process, and are presented in a more final form at  
20 the subsequent information centers leading towards the  
21 draft plan.

22 Q. Would you agree that this fine tuning  
23 is really an opportunity for the public to comment on  
24 how negative effect of operations will be mitigated  
25 after the decision of where operations will occur has



1       been made?

2                   A. No, I wouldn't agree that that's  
3       taking place at the last stage. That's taking place  
4       throughout the entire planning process.

5                   The planning process is designed to, at  
6       the outset, identify where values are on the basis of  
7       the background information that's been collected, to  
8       apply the expertise and knowledge experience of the  
9       planning team and the local citizens' committee in  
10      determining what are the best ways of operating to  
11      prevent, minimize and mitigate any potential negative  
12      environmental effects.

13                  We put forward what is deemed to be  
14      reasonable prescriptions to deal with the concerns that  
15      have been raised. Put them forward in preliminary  
16      stage or draft stage at the beginning of the process  
17      with the collection of advantages and disadvantages to  
18      allow for further public input to fine tune those into  
19      subsequent prescriptions, and you put those back out  
20      for further public review so people can see what has  
21      happened with their earlier input, to once again  
22      provide that opportunity to people to comment on that,  
23      again fine tune and then prepare the draft plan.

24                  Q. But with respect to harvest areas, we  
25      are talking about fine tuning throughout the process.

1       Wouldn't you have to agree that in that respect the MNR  
2       proposal does not really address the concern raised in  
3       this hearing that the public is frustrated by being  
4       limited to tinkering with the details of decisions  
5       which have already been made?

6                   A.   With respect to harvest?

7                   Q.   Yes.   Areas for harvest.

8                   A.   No, I wouldn't agree with that.   I  
9       would say that the very fact that we have come forward  
10      early on and attempted to get full understanding of the  
11      values information, and that we are indeed dealing with  
12      either site specific values or areas that are of a more  
13      larger geographic nature, still values, and we are  
14      planning appropriately through their concern planning  
15      process about values generally as they relate to the  
16      harvest operation, I believe that covers on the public  
17      concerns that we have heard to date and through the  
18      course the hearing.

19                   Q.   I also believe you gave evidence, if  
20      I understood it, that there is a concern with  
21      identifying alternative areas for operations because  
22      the public would want information about how the  
23      alternative areas were identified.   Have I understood  
24      that evidence?

25                   A.   Very simplistically stated, yes.   In

1 our simplistic response to a proposal that has forward  
2 from the Ministry of the Environment, we do  
3 characterize it that, if you permit me to say, all of a  
4 sudden a map appears with alternative harvest areas  
5 shown on it with no indications to how they have been  
6 determined.

7 That on the basis of our experience of  
8 planning plus the concerns that we already expressed to  
9 the hearing and subsequent negotiation sessions, that  
10 there is a real need to make sure the public has a  
11 traceable link, if you will, through the planning  
12 process, as to where the information comes from.

13 So in that sense it is one of the  
14 concerns that MNR has with the suggestions put forward  
15 by MOE that alternative areas for harvest appear in the  
16 summary form without any earlier involvement of publics  
17 and any indication of how they derive, and we believe  
18 that to properly fill that gap, if you will, would be a  
19 considerable workload.

20 Q. Well, I do not know if you recall  
21 that the MOE witnesses explained that the alternative  
22 areas would be areas which meet the selection criteria,  
23 and as I understand it, the selection criteria will be  
24 identified to the public even prior to the first  
25 information centre; isn't that correct?



1                   A. You are correct on both accounts.

2                   Q. I would like to turn to the  
3                   interrogatory answers, which are Exhibit 2254(B), and  
4                   specifically question 3, which appears at page 4 and 5.

5                   The Ministry of the Environment was  
6                   asking why alternatives are presented for only access  
7                   and not harvest renewal and maintenance, the other  
8                   three activities, and I would just like to refer to I  
9                   guess, page 5, see whether I understand your answer.

10                  Would you just turn to page 5. In the  
11                  middle of the first paragraph you say that;

12                  Eventually, virtually, all of the  
13                  Crown land area of a forest management  
14                  unit on which timber management is a  
15                  permissible land use will be subjected to  
16                  harvest and renewal activities and as  
17                  required maintenance activities.

18                  Then moving to the first sentence of the  
19                  next paragraph;

20                  An approval of the undertaking of  
21                  timber management by the EA Board would  
22                  have the effect of approving timber  
23                  management activity on those Crown lands  
24                  in the area of the undertaking on which  
25                  timber management is a permitted use as

1 previously determined or may subsequently  
2 be determined through land use planning.  
3 And then third paragraph, in the middle  
4 of the page;

5 In the context of the nature of the  
6 undertaking and the effect of the Board's  
7 approval, there are really no true  
8 alternative areas for operations, and  
9 therefore there is no need for  
10 consideration of alternative geographic  
11 areas for operation.

12 Rather the determination of geographic  
13 areas for operation is really an act of  
14 scheduling in accordance with sets of  
15 criteria which guide reflection of those  
16 areas for five year periods of time.  
17 And then just moving down to last  
18 paragraph.

19 If the purpose of consideration of  
20 alternative geographic areas for  
21 operations, particularly harvest  
22 operations, is to influence the  
23 scheduling of operations by deferring  
24 operations for periods of five years at a  
25 time, MNR submits that such a provision

1 would create an unacceptable degree of  
2 uncertainty in the planning process,  
3 would frustrate and mislead the public by  
4 repeatedly reconsidering areas for  
5 operation every five years and has the  
6 potential to seriously affect the ability  
7 of the province to meet the purpose of  
8 the undertaking.

9 Now, I would just like to explore whether  
10 with you what I understand this answer, the logic of  
11 this answer.

12 The first premise is that it is improper  
13 to reconsider permitted uses set out in the district  
14 land use guidelines. Is that what you are talking  
15 about when you are talking about land use decision?

16 A. Yes, it is.

17 Q. And then you say that Board approval  
18 will have the effect of approving timber activities  
19 everywhere forestry is a permitted use, and that each  
20 and every hectare will be harvested where forestry is a  
21 permitted use; is that correct?

22 A. No, it would be subsequent, or sorry,  
23 subject to timber management planning process and all  
24 the elements of it; identification of values, area of  
25 concern planning process, prescriptions coming out of



1 those, public input, and then a necessary review and  
2 approval process would fine tune, if you will, both the  
3 land base or area on which timber management activities  
4 would be allowed to proceed and the manner in which --  
5 manner or methods by which those timber management  
6 activities would be conducted.

7 Q. You said on page 5, that eventually,  
8 virtually, all of the Crown land on which timber  
9 management is a permissible use will be subject to the  
10 harvest and renewal activities, and that therefore  
11 there are no alternative areas of operations. Would  
12 you agree with that?

13 A. In that sentence the word "virtually"  
14 was used on our part to describe, in simplistic terms,  
15 that, yes, operations would proceed on virtually all of  
16 the land banks.

17 Knowing that right now our area of  
18 concern prescriptions are resulting in either reserved  
19 decisions or decisions resulting in modifications to  
20 operations on - I will use a range, between 10 and 20  
21 per cent of the land base - as well as there are  
22 further portions of land base that are being withdrawn  
23 from time to time for other uses, as well as there are  
24 portions of land base which are going into  
25 infrastructure production such as primary and secondary

1 roads.

2 But in very a simplistic statement of  
3 trying to capture what we believe to be the essence of  
4 our responsibility as Ministry of Natural Resources to  
5 manage Crown lands in the production of timber,  
6 simplistically stated, yes, virtually all hectares will  
7 be subject to harvest, renewal and maintenance at some  
8 time.

9 Q. And it is your position that there  
10 are no alternative areas of operations and that timber  
11 management is simply a matter of scheduling when the  
12 operations will occur?

13 A. Yes, I do believe that, if that was  
14 the question, and the reason I believe that, is that  
15 alternatives usually implies to people that there is  
16 somewhere else to go. That is how we've interpreted  
17 the use of word. That operations can occur some other  
18 place and not here today.

19 Usually the suggestions coming forward  
20 to, as a result of someone indicating that there is a  
21 concern, a potential concern, or perhaps a difference  
22 of opinion as to the management of the land, and  
23 looking at avoiding a problem.

24 We don't believe that it is really proper  
25 to describe that as an alternative, somewhere else to

1 go, but rather a scheduling decision. That you may  
2 choose not to operate there in a five year period and  
3 go somewhere else. To look at the operation simply  
4 means move to another block for a period of time.

5 Q. And as I understand the interrogatory  
6 response, MNR is of the view that if it is given input  
7 into the scheduling decision the public will be  
8 uncertain, frustrated and misled; is that correct?

9 A. That comment was not intended to be  
10 interpreted solely as the general public. It also is  
11 intended to refer to those that are involved in the  
12 forest industry, who are looking at a need to have a  
13 continuous and predictable supply of work, and that  
14 there is a degree of certainty required for planning,  
15 business planning purposes, for maintaining those  
16 businesses and on the public, on the true public side,  
17 it's a comment that I have had experience personally  
18 where individuals are concerned about the manner in  
19 which areas are scheduled for operations and a concern  
20 that there is -- a decision can always be revisited  
21 five years -- in this case five years, after five  
22 years, and would not necessarily address concerns that  
23 some publics may have. It is truly not a timber  
24 management concern but a land use planning or land use  
25 decision.



1                   In that sense of deferring operations for  
2 a five year period would not properly address that  
3 concern. Instead an individual with a concern such as  
4 that should be pursuing other mechanisms such as  
5 attempts to -- or the provisions that are in existence  
6 now to revise as to land use guidelines.

7                   Q. I think you stated this morning that  
8 the land use decisions you referred to in this evidence  
9 are the district land use guidelines. Am I correct on  
10 that? That it is the land use decision that is  
11 improper to reconsider?

12                  A. That is correct. It is improper to  
13 reconsider the land use decisions made through the land  
14 use planning exercise resulting in the district land  
15 use guidelines. Through the timber management planning  
16 process is the only vehicle to do that.

17                  Q. I am not sure I understood that. The  
18 timber management planning process is a vehicle to  
19 reconsider the district land use guidelines or is not?

20                  A. It is not the vehicle with which to  
21 reconsider district land use planning decisions. That  
22 is why we have provided for an amendment process for  
23 the district land use guidelines, which is an entirely  
24 separate activity. Sorry, an entirely separate  
25 planning process.

1 Q. Well, I think I understood from the  
2 evidence given earlier in this hearing about the  
3 district land use guidelines that they are not binding  
4 plans but are direction and guidelines. Is that your  
5 understanding?

6 A. When you use the word "binding," how  
7 do you use it in that question?

8 Q. Well, I am referring to earlier  
9 evidence given by MNR witnesses that the decisions were  
10 strategic or, sorry, the district land use guidelines  
11 were strategic direction and were not binding  
12 decisions. I think that's Mr. Monzon's words earlier  
13 in this hearing. So I am using them in the sense that  
14 he used them.

15 A. The Ministry of Natural Resources has  
16 a responsibility for land use planning on behalf of the  
17 Ontario government, and has had in place a land use  
18 planning exercise starting at the strategic level with  
19 strategic land use plans, working down to district land  
20 use plans or district land use guidelines in the case  
21 that we have now.

22 Those district land use guidelines would  
23 not carry the same time weight as an official plan and  
24 as such, would not be, as I understand it, would not be  
25 legally binding in that sense.

1                   However, given that they have been  
2 developed with public consultation and that indeed they  
3 have been approved through -- have been approved and  
4 are in place, they do provide the framework within  
5 which we conduct our resource management planning.

6                   Q. Well, as I understand the district  
7 land use guidelines, they commonly permit multiple uses  
8 on any specific geographic area?

9                   A. There is a combination of events or  
10 permitted activities or permitted uses that can occur  
11 and it is quite common to have land use zones which  
12 have more than one principle activity being permitted,  
13 of which timber management may be one, tourism,  
14 recreation may be others.

15                   There are also situations or zoning which  
16 involves single use activities, such as those where  
17 provincial parks were in existence at the outset of the  
18 district land use guideline process as well as those  
19 new parks which were considered and adopted through  
20 that process. Those would be examples of single use.

21                   Q. But many of these district land use  
22 guidelines permit multiple uses such as cottaging,  
23 tourism, recreation, mining, forestry, all in the same  
24 area. That is correct; isn't it?

25                   A. Yes, all within the district land use



1 zone.

2 Q. But that does not mean that all of  
3 the permitted uses will actually take place on each and  
4 every hectare for which it is permitted use, does it?

5 A. That is correct. Not each of those  
6 activities would occur on each and every hectare and at  
7 the same time.

8 Q. Or ever, necessarily; isn't that  
9 correct?

10 A. Or ever.

11 Q. And isn't it correct that before the  
12 use is listed as permitted on a district land use  
13 guideline can actually be carried out, other  
14 appropriate planning exercises and approvals must be  
15 carried out and obtained?

16 A. Not in all cases, but for many of  
17 those that are more -- that I would consider more  
18 active and have more of an impact, yes, there are other  
19 planning processes in place. An example might be the  
20 district fisheries plan, which would provide further  
21 resource management and direction consideration for  
22 fisheries resources and pilot men employed in areas of  
23 both commercial fishing and sport fishing. There may  
24 be other situations where recreational opportunities  
25 would be listed as permitted or desirable uses in an

1 area, but we do not have my official plan or subsequent  
2 permit system, if you will, for those activities.

3 Q. I believe in MNR's interrogatory  
4 response to question 13, you acknowledge that land use  
5 planning does not deal with site specific effects and  
6 that timber management planning carries out the  
7 detailed site specific planning. Do you agree with  
8 that?

9 A. Without refreshing my memory, yes, I  
10 do agree with that in the general sense that the timber  
11 management planning process does carry out a finer  
12 level of planning for timber management activities and  
13 potential effects it may have on other uses or uses  
14 values down in the forest.

15 Q. And you have indicated that planning  
16 decisions still have to be made in certain cases even  
17 where a use is permitted under the district land use  
18 guidelines.

19 Would you agree with respect to forestry  
20 that the planning decisions are made in the timber  
21 management planning process, which includes the  
22 consideration of the environmental effects?

23 A. Yes, I would agree that the details,  
24 the operational details of how you will go about  
25 conducting that permitted use in the area are left to

1 the subsequent resource plan, in this case timber  
2 management planning process.

3 MR. MARTEL: Can I get something  
4 clarified, Ms. Gillespie, from MOE? Are you suggesting  
5 or is MOE suggesting that we go back to something as  
6 basic as in every timber management plan, reconsidering  
7 the district land use guidelines and revisiting that  
8 whole area in every plan?

9 MS. GILLESPIE: No, Mr. Martel.

10 What we are suggesting, is that MNR's  
11 objection to proposing alternative areas for harvest  
12 operations, one of their objections is that such an  
13 exercise would be an improper reconsideration of the  
14 decision that has already been made, and it is MOE's  
15 position that looking at alternative areas of  
16 operations is not an improper reconsideration of any  
17 land use decision that's already been made.

18 MR. MARTEL: Then let me just take it a  
19 step further. Again, are you suggesting, and I think  
20 this is the horns of the dilemma, is that you want  
21 alternatives presented to harvest areas because the  
22 public is -- in your opinion, MOE is dissatisfied with  
23 coming to a meeting where the decision in fact has been  
24 rendered and that there really are nothing left for  
25 them to do but tinker or object to decisions which have



1 already been made?

2 MS. GILLESPIE: I think that is  
3 essentially correct, Mr. Martel.

4 It is MOE's position, I think it was  
5 MOE's evidence, that the decision is obviously made at  
6 some point as to what areas operations will occur in  
7 and there are selection criteria and these areas are  
8 selected, and it is simply a question of permitting the  
9 public to have some input into selecting the areas of  
10 operations, and we are asking these questions about the  
11 district land use guidelines to try and explore the  
12 objection that has been raised to that process, which  
13 seems to be that if we allow the public to comment on  
14 alternative areas for operations, that would be redoing  
15 district land use guidelines and MOE disagrees with  
16 that position.

17 MR. MARTEL: Well, short of having  
18 another open house -- I mean MNR is taking the position  
19 we have made this selection criteria and the public is  
20 going to have to accept it. We can fine tune it a  
21 little bit, I guess, if the objections are strong  
22 enough and maybe the Ministry can respond, because I  
23 think I raised this concern a long time ago, that  
24 decisions that people are -- well, people aren't making  
25 decisions when they come to an information centre.

1 They might, if they can raise a strong enough  
2 objection, they might get something deferred to a later  
3 date.

4 But my concern is that the public, over a  
5 period of time will say, well, look there is no sense  
6 going to that because the decisions have been made, and  
7 that is a real fear I have. I do not know how MNR is  
8 going to counter that, and I am listening carefully,  
9 but that is a fear I have expressed on a number of  
10 occasions, that if you are going to involve the public  
11 in a meaningful way, they can't see themselves as just  
12 tinkering with the system. Otherwise I think, and  
13 maybe I will be wrong, but I think they will reach a  
14 point and say look, we have had no input so what is the  
15 sense of going and it is a fear I have so I express it  
16 again, and maybe you can help me, but how do we get  
17 away from that perception. I think that is MOE's fear,  
18 too.

19 MS. GILLESPIE: Q. Mr. Kennedy, one of  
20 the things that MNR has stated in its answer to  
21 interrogatory number 3, and I think in your evidence  
22 this morning, is that essentially it is only a matter  
23 of scheduling as to -- harvest is only a matter of  
24 scheduling. It is going to happen and there is no  
25 point in permitting the public to comment on

1 scheduling.

2 But wouldn't you agree that we are  
3 talking about 5 year periods of time, and the  
4 environmental effects may well vary depending on when  
5 the harvest is scheduled.

6 MR. KENNEDY: A. Yes, it is conceivable  
7 that some aspects of the environment, particularly  
8 those in the social realm could change over a period as  
9 short as 5 years or less.

10 Q. We have heard evidence about new  
11 harvest technology might develop that could lessen the  
12 impact on a particular site or industry demand could  
13 change in five years and the industry may be able to  
14 get the fiber from another location with less negative  
15 impact in the meantime. Would you agree with that?

16 A. Is that one situation you are  
17 describing and if so, I would say that it is  
18 conceivable that operations could change for a  
19 particular given area.

20 I would also make the point, though, that  
21 if indeed there is a concern over operations on a  
22 particular specific site, that that is exactly the kind  
23 of situation that they are concerned in the planning  
24 process could be applied to.

25 We have, as you know, our standard list



1 of items for values and if there was a concern raised  
2 by an individual that could be considered in that  
3 light. I believe we are talking more of a general  
4 situation, where, as I understand the proposal, is to  
5 look at alternative allocations at a much larger scale  
6 and I still have trouble with how one would arrive at  
7 the summary map that has been suggested with to date I  
8 have heard no explanation to the number of areas that  
9 would be proposed, the manner in which they would be  
10 derived, and I understand at the point that they come  
11 forward as a result of the planning and selection  
12 criteria, I have no feel for how many areas would be  
13 shown, is it alternatives to each and every block.

14 The process by which you would whittle  
15 out or reduce the total potential from eligibility  
16 areas down to a handful of areas selected. Sorry,  
17 handful of areas selected for operations proposing an  
18 alternative form, I have great difficulty with that and  
19 in fact will be returning in panel 4, our environmental  
20 planner, Mr. Bishop, and I, will be pursuing this  
21 matter further both in direct evidence and will be  
22 available for further cross-examination on this  
23 subject.

24 Q. Well, I take it you would agree that  
25 it is consistent with good environmental planning to

1 schedule harvest and renewal in a manner which  
2 minimizes negative effects on the environment?

3 A. Yes, I would.

4 Q. And in order to schedule areas for  
5 operations with the least negative effects, don't you  
6 have to consider alternative areas within the 5 year  
7 time frame?

8 A. I think it is most important to  
9 consider what activities are being proposed and the  
10 manner in which you can best schedule operations and to  
11 plan operations or develop appropriate prescriptions,  
12 both in the seasonal sense within the 5 years, yes.

13 Q. And wouldn't you agree that the  
14 public is interested in the potential effects of  
15 operation sand the advantages and disadvantages of  
16 alternative areas for operations within the 5 year time  
17 frame?

18 A. Once again I am hard pressed to think  
19 of situations beyond road locations, beyond those areas  
20 associated with specific values, which are subjected to  
21 the area of concern planning process, where there has  
22 been public come forward and speak of concerns of -- a  
23 general concern about operations occurring on harvest  
24 blocks irrespective of values. A concern about the  
25 scheduling of those activities, solely timber

1 management purposes, I am hard pressed to think of  
2 situations like that.

3 I am aware that there can be, from time  
4 to time, concerns raised about land use, concerns  
5 raised should timber management be a permitted activity  
6 at all on large blocks of land, and for those kinds of  
7 concerns, there is an opportunity to revisit the  
8 decision in the district land use guideline and MNR has  
9 provided a separate process whereby amendments to  
10 district land use guidelines could be proposed by  
11 anyone and be given a fair opportunity for airing of  
12 their concerns as well as full public input and review  
13 for amending the permitted use in that area.

14 Q. But you do not think the public would  
15 be interested in seeing a number of alternative areas  
16 for harvest operation?

17 A. Strictly on a timber management  
18 process, no, I can't say from my experience or from  
19 actually any other collection of experience of  
20 knowledge we have had, but that is a realistic concern.

21 It would require putting in place --  
22 sorry, when I review these requests, on behalf of the  
23 Ministry, I am looking at, does it warrant putting in  
24 place a standard process, a standard way of approaching  
25 that concern as a requirement in timber management



1 planning on the routine basis for application of each  
2 and every plan, each and every time, for each and every  
3 hectare out there. I find that to be an excessive  
4 response to a concern if it does exist, and I do  
5 question it.

6 Q. But surely this is already happening,  
7 Mr. Kennedy. Your planners are -- they have selection  
8 criteria, they have an eligibility map and they come up  
9 with areas selected for operations. Surely they are  
10 looking at the advantages and disadvantages of areas  
11 when they come up with their selected areas.

12 Isn't this just a question of revealing  
13 to the public decisions that are being made in the  
14 process already? It is not a question of creating a  
15 whole new set of decisions or a new level of open  
16 houses. It is just a question of revealing to the  
17 public a process that you are already going through;  
18 isn't it?

19 A. I believe we are revealing, as you  
20 say, that process. I do not think there is anything  
21 kept behind closed doors.

22 Through the full disclosure, if you will,  
23 of the selection criteria, the discussion on the manner  
24 in which they are applied to the eligibility maps,  
25 there is that opportunity for the public to see what is

1 happening, to retrace the steps if they choose, and to  
2 comment and I believe that is adequate.

3 MS. GILLESPIE: Those are all my  
4 questions, Madam Chair. Sorry, one minute.

5 I confirm those are all my questions.  
6 Thank you.

7 MADAM CHAIR: Thank you.

8 MR. FREIDIN: Madam Chair, you will be  
9 pleased to know I have no questions on re-examination.

10 MADAM CHAIR: Thank you, Mr. Freidin. We  
11 will go on to your reply evidence 2.

12 MR. FREIDIN: Yes. Perhaps it would be a  
13 convenient time for a short break. Maybe 10 minutes  
14 just to get some new paper and get our witnesses  
15 arranged. At least fifteen minutes.

16 MADAM CHAIR: Fine. Mr. Freidin.

17 ---Recess at 9:30 a.m.

18 ---On resuming at 9:55 a.m.

19 MADAM CHAIR: Let's get started with the  
20 Ministry of Natural Resources Panel 2 evidence reply.

21 MS. BLASTORAH: I would like to start by  
22 marking some exhibits, Madam Chair.

23 The first exhibit will be the Minister of  
24 Natural Resources Reply Statement of Evidence No. 2.

25 MADAM CHAIR: This will be Exhibit 2258.

1 MS. BLASTORAH: Thank you.

2 ---EXHIBIT NO. 2258: Minister of Natural Resources  
3 Reply Statement of Evidence No. 2.

4 MS. BLASTORAH: The next exhibit will be  
5 a package of interrogatory answers from the Ministry of  
6 Natural Resources to interrogatories filed by or served  
7 by, rather, the Ministry of the Environment and Forests  
8 for Tomorrow. We have included those as a single  
9 package. It is 28 separate pages, copied both sides,  
10 and that would be Exhibit 2259. This material is  
11 already in the hands of the parties and the Board, I  
12 believe. So I have one copy here for the record.

13 MADAM CHAIR: Ms. Blastorah, there is  
14 also a May 29th addition to that. A slightly amended  
15 version of answers to Forests for Tomorrow's questions  
16 5 and 6?

17 MS. BLASTORAH: Yes, I beg your pardon. I  
18 will just check and see if that is included in the  
19 package. It ought to be if it is not. Yes, it is  
20 included in the package of 28 pages. Thank you.

21 It appears we have the option of having  
22 more than one microphone on this week.

23 ---EXHIBIT NO. 2259: Package of interrogatory answers  
24 from the Ministry of Natural Resources to  
25 interrogatories served by the Ministry of  
the Environment and Forests for  
Tomorrow.



1 MS. BLASTORAH: The next exhibit will be  
2 number 2260.

3 MR. MARTEL: Did you say both sides?

4 MS. BLASTORAH: Yes, the copy that I have  
5 provided for the record is copied two sides and it 28  
6 pages. Those pages are copied two sides. If it would  
7 be easier for the Board we can have extra copies of  
8 that exhibit made at lunch time and provide them.

9 MADAM CHAIR: Yes, please do that, Ms.  
10 Blastorah.

11 MS. BLASTORAH: They are individually  
12 numbered by question, but we will do that.

13 MADAM CHAIR: Thank you.

14 MS. BLASTORAH: The next exhibit then  
15 will be 2260. That is a package of interrogatories in  
16 relation to MNR Reply, Panel 5, and that package  
17 consists of 15 pages copied, single-sided. I do have  
18 some extra copies of that here today which I can  
19 provide the Board.

20 Again this material was previously  
21 provided to the parties and the Board. We are marking  
22 it here today because Mr. Callaghan has been added to  
23 the Panel 2 evidence and these are interrogatory  
24 answers relating to his material from Panel 5.

25 MADAM CHAIR: We are having trouble

1 finding that one, too, Ms. Blastorah.

2 MS. BLASTORAH: I have extra copies of  
3 that, so I can provide those to you.

4 MS. BLASTORAH: And if the parties do not  
5 have those here, we do have a few extra copies. So  
6 perhaps they can speak to me on a break and I will  
7 provide those.

8 ---EXHIBIT NO. 2260: Package of interrogatories in  
9 relation to MNR Reply, Panel 5.

10 MS. BLASTORAH: And perhaps I should just  
11 add for the record which interrogatory numbers those  
12 were in relation to Panel 5. They are FFT questions  
13 number 5, 6, 7, 13, 14, 15, and 18 in relation to Panel  
14 5, and I believe that is all.

15 The next item is a letter dated June 1st,  
16 1992, addressed to the EA Board and the full-time  
17 party, signed by me, providing the curricula vitae for  
18 Dr. Robert Steedman and Mr. Paul Ward. Those CVs are  
19 attached to that letter.

20 The package that I have for the exhibit  
21 consists of seven pages including both of those two  
22 curricula vitae and the covering letter, and those  
23 would be Exhibit 2261, I believe.

24 ---EXHIBIT NO. 2261: Letter dated June 1, 1992  
25 providing the curricula vitae for Dr.  
Robert Steedman and Mr. Paul Ward.

1 MS. BLASTORAH: Again, I do have a few --  
2 oh, no, I am sorry. It is the next item that I have  
3 extra copies of.

4 Next, I have the curricula vitae for Mr.  
5 Brian Callaghan, who is a witness appearing in this  
6 panel. It was previously provided to the Board and the  
7 parties separately, and that would be Exhibit 2262.  
8 Again, I have a few extra copies of that document if  
9 anyone does not have it here today, and that document  
10 consists of five pages copied single-sided.

11 ---EXHIBIT NO. 2262: Curricula vitae for  
12 Brian Callaghan.

13 MADAM CHAIR: Ms. Blastorah, are you also  
14 including the CVs for Dr. Wagner, Mr. Euler and Mr.  
15 Watt?

16 MS. BLASTORAH: No, Mr. Euler and Mr.  
17 Watt will be appearing in Panel 3 and we will mark  
18 those at that time, and Dr. Wagner, who was originally  
19 scheduled to appear in Panel 3 will not be available  
20 until August and we will mark his curricula vitae at  
21 the time he appears.

22 Again, if it would be more convenient for  
23 the Board, I could provide copies of that exhibit at  
24 lunch time.

25 We will speak to Mr. Pascoe at the lunch



1 break, Madam Chair, and if there are any copies of any  
2 of those exhibits that are required, we will be happy  
3 to provide you.

4 I think the next item would be to swear  
5 the witnesses who have not previously appeared.

6 Mr. McNicol, of course, has just finished  
7 being a witness in Panel 1. Mr. Abraham was a witness  
8 in the Ministry's Panel 10(B), during our original  
9 evidence. Mr. Waito has previously been a witness and  
10 was sworn at that time. Of course Mr. Kennedy has been  
11 a witness many times, and I think then our new  
12 witnesses will be Dr. Robert Steedman who is on the  
13 left-hand side here. Mr. Paul Ward, seated next to  
14 him, Mr. Brian Callaghan seated next to Mr. Ward, and I  
15 believe those are the three witnesses who could be  
16 sworn at this time or affirmed.

17 MADAM CHAIR: Do you wish to be sworn or  
18 affirmed gentlemen?

19 MR. CALLAGHAN: Sworn.

20 DR. STEEDMAN: Sworn.

21 MR. CALLAGHAN: Mr. Ward would like to be  
22 affirmed.

23 JOHN McNICOL,  
24 FRANK KENNEDY, Resumed.  
25 KEN ABRAHAM,  
RON WAITO; Recalled.

1                    BRIAN CALLAGHAN,  
2                    ROBERT STEEDMAN; Sworn.  
3                    PAUL WARD; Affirmed.

4                    MS. BLASTORAH: And the next item would  
5 be to qualify the three witnesses who have not  
6 previously appeared.

7                    I will keep that short, but I think since  
8 the Board is not familiar with these witnesses, we will  
9 take just a few minutes to let you know what the area  
10 of their expertise is.

11                    DIRECT EXAMINATION BY MS. BLASTORAH:

12                    Q. Beginning with you, Dr. Steedman. I  
13 see from your curricula vitae you have a Bachelor of  
14 Science degree in Environmental Biology?

15                    DR. STEEDMAN: A. That is correct.

16                    Q. And a Master of Science in  
17 Entomology?

18                    A. That is correct.

19                    Q. And you have a Doctorate in Zoology  
20 from the University of Toronto?

21                    A. That is correct.

22                    Q. And I understand that your thesis  
23 work in the doctorate degree is relevant to your  
24 evidence that you will be giving to the Board.

25                    Could you briefly indicate to the Board

1 what the nature of that work was?

2 A. That work involved a three year  
3 attempt to developed predictive models relating aspects  
4 of land use in southern Ontario, most particularly land  
5 clearing, agriculture and urbanization to various  
6 measures of the health or quality of stream systems in  
7 the Toronto area.

8 Q. Thank you. And upon graduation from  
9 university, you first worked with the Ministry of  
10 Natural Resources as a district fisheries biologist?

11 A. Yes, I did.

12 Q. And you then you held that position  
13 for a year and you then joined the Ministry of the  
14 Environment as a water resources scientist; is that  
15 correct?

16 A. That is correct.

17 Q. And in 1989, you rejoined the  
18 Ministry of Natural Resources as a research  
19 co-ordinator?

20 A. I did.

21 Q. And in relation to what was that  
22 position?

23 A. That was to implement the aquatic  
24 effects and the effectiveness research program and the  
25 tourism effects and effectiveness research program that

1 was applied in Panel 16 in his hearings.

2 Q. And you are still in that position?

3 A. Yes, I am.

4 Q. And you are also an adjunct professor  
5 at Lakehead University; is that correct?

6 A. Yes in biology and forestry.

7 Q. Is there anything else from any of  
8 those three positions that you would like to highlight  
9 in any of your responsibilities in those three  
10 positions in relation to the evidence you will be  
11 giving to the Board today and possibly tomorrow?

12 A. My role as research co-ordinator of  
13 the Fisheries and Tourism Research Unit at the Centre  
14 for Northern Forest Ecosystem Research in Thunder Bay,  
15 on Lakehead Campus, is to design and implement, with  
16 the help of a number of scientists who have been hired  
17 for this job, the detailed activity, detailed research  
18 activities, to answer or to provide the information  
19 means outlined in Panel 16; most particularly to assess  
20 the effectiveness of the timber management guidelines  
21 for fish and fish habitat, for tourism values, and to  
22 address more generalized effects of timber management  
23 on those resources.

24 Q. And I see from your curricula vitae  
25 that you have a number of publications including, I



1 understand, some referee publications; is that correct?

2 A. Yes, it is.

3 Q. And I believe there were several of  
4 those you wish to highlight to the Board because they  
5 are relevant to your evidence in this panel, and I  
6 believe you have also indicated to me that there is one  
7 additional publication not shown on your curricula  
8 vitae that you would like to add. Would you do that?

9 A. I will deal with that last point  
10 first. That would be in the final page of the CV, and  
11 I mention that because it is perhaps the first  
12 published product of the Fisheries and Tourism Research  
13 Unit that relate to aquatic effect and effectiveness  
14 research, and the title of that is, it is something  
15 like this, The Effects of Timber Harvest on Land Water  
16 Linkages In The Boreal Forest, and that was published  
17 as an abstract in the Zoology Museum bulletin at the  
18 University of Amsterdam. It was as part of an  
19 international fisheries congress where we presented the  
20 outline of our research and the results of the  
21 preliminary literature review on the timber management  
22 effects, defy ecosystems.

23 Q. And do you recall when that took  
24 place or when that was published?

25 A. That was by myself, Patrick Morash,

1 Michael Bozek, who worked in our unit in 1991.

2 Q. And I believe you wanted to highlight  
3 some of the other publications that are relevant to  
4 your evidence?

5 A. Perhaps the most directly relevant  
6 one is Steedman 1988, third from the bottom, on page 2,  
7 which outlines the quantitative models that we  
8 developed at the University of Toronto to relate land  
9 use to aquatic ecosystem health or quality.

10 There are really two or three themes in  
11 the rest of those papers. They deal primarily with  
12 this idea of developing predictable quantitative  
13 relationships between land use and aquatic ecosystems.  
14 That would be the first theme.

15 The second theme deals with the idea of  
16 identifying and implementing science that is relevant  
17 to understanding those problems on realistic planning  
18 scales of space in time, and the third one is  
19 developing the idea of ecosystem health as a way of  
20 improving management aquatic ecosystems. Most of the  
21 papers on those two pages are linked in some way to  
22 those three things.

23 Q. And is it fair to say, Dr. Steedman,  
24 that your education and employment experience have  
25 involved you extensively in the design and conduct

1 research projects with regard to the aquatic  
2 environment and effective management action on that  
3 environment?

4 A. Yes, that's been my primary interest  
5 and activity as a professional.

6 MS. BLASTORAH: And, Madam Chair, I would  
7 ask that Dr. Steedman be qualified in that regard as  
8 having expertise in the design and conduct of research  
9 in relation to the aquatic environment and effects of  
10 management action on that environment.

11 MADAM CHAIR: Any objections? Then Dr.  
12 Steedman shall be so qualified.

13 MS. BLASTORAH: Thank you. The next  
14 witness is Paul Ward.

15 Q. Now, Mr. Ward, I understand you have  
16 a Bachelor of Science of Forestry and you are a  
17 registered professional forester?

18 MR. WARD: A. That is correct.

19 Q. And you have had some additional  
20 training courses which are relevant to your evidence  
21 before this Board?

22 A. I have taken a variety of courses and  
23 attended conferences and so on dealing with fire  
24 research and various applications of applied  
25 management, primarily in North America.

1 Q. And those are outlined in your  
2 curricula vitae?

3 A. That is right.

4 Q. And you joined the Ministry of  
5 Natural Resources in 1978 as a unit forester in Sioux  
6 Lookout?

7 A. That is right.

8 Q. And you subsequently became the  
9 Provincial Fire Technology Specialist in 1981?

10 A. That is right.

11 Q. And you held that position until  
12 1986; is that correct?

13 A. That is right.

14 Q. And I understand that your  
15 responsibilities in that position included technology  
16 development and transfer in relation to fire management  
17 technology?

18 A. That is correct.

19 Q. And the identification of need in  
20 relation to new fire management technology?

21 A. Correct.

22 Q. And in 1986, you continued with the  
23 Ministry of Natural Resources in the position of  
24 Science and Technology Co-ordinator within the Aviation  
25 Flood and Fire Management Branch?



1 A. That is correct.

2 Q. And your responsibilities there  
3 includes research co-ordination, fire science and  
4 technology development, and the transfer of the  
5 components of the fire management program to the field;  
6 is that correct?

7 A. That is correct.

8 Q. And that includes the identification  
9 of prioritization of research needs in relation to fire  
10 management?

11 A. That is right.

12 Q. And your responsibilities also  
13 include the management infrared sensing and the fire  
14 management library?

15 A. Correct.

16 Q. And I see that you too have a number  
17 of publications in relation to fire management which  
18 are outlined in your curricula vitae?

19 A. That is correct.

20 Q. Are there any of those that you would  
21 particularly like to highlight to the Board in relation  
22 to your evidence?

23 A. Well, none of them are specifically  
24 relevant to the particular topic except I have written  
25 extensively about the nature of fire management in

1 Ontario and the way the fire management program is  
2 delivered. That is sort of the primary issue  
3 concerning the evidence I am to present.

4 Q. And is there anything else that I  
5 have not covered that would you like to highlight in  
6 relation to your current or previous position that is  
7 relevant to your evidence in this panel?

8 A. Except again reconfirm a fair amount  
9 of experience in the fire management program in  
10 Ontario, particularly from the standpoints of measuring  
11 effectiveness of the program and technological  
12 development to the approved effectiveness and  
13 efficiency in the way the fire management programs are  
14 delivered.

15 MS. BLASTORAH: Madam Chair, I would ask  
16 that Mr. Ward be qualified as a professional forester  
17 with particular expertise in relation to fire  
18 management and the Ministry of Fire Management program,  
19 I should add.

20 MADAM CHAIR: Any objections? Then Mr.  
21 Ward shall be so qualified.

22 MS. BLASTORAH: Thank you. And lastly,  
23 Mr. Callaghan.

24 Q. Mr. Callaghan, I understand that you  
25 also have a Bachelor of Science in Forestry from the

1 University of Toronto and you, too, are a registered  
2 professional forester.

3 MR. CALLAGHAN: A. That is correct.

4 Q. And you have some additional courses  
5 relevant to your evidence to this Board?

6 A. I have taken courses in forest  
7 management modelling, valuing the natural resources and  
8 a number of other decision courses.

9 Q. And you are currently employed with  
10 the Ministry of Natural Resources, and have been since  
11 your graduation from university?

12 A. That is correct.

13 Q. And your various positions with the  
14 Ministry are outlined in your curriculum vitae?

15 A. Yes.

16 Q. And is it fair to say that as part of  
17 your work with the Ministry, you have been involved in  
18 the development and application of various forest  
19 management modelling tools for use in timber management  
20 planning and wood supply analysis?

21 A. That is correct.

22 Q. Would you like to provide some brief  
23 details to the Board in relation to the types of  
24 modelling exercises, the types of models that you have  
25 been involved with?

1                   A. Yes. I originally took the OWOSFOR  
2 model off of the main frame computer and put it on a  
3 micro computer and then distributed that to the field  
4 and supported OWOSFOR in that way. As well as  
5 supporting form of the use of FORMAN in setting up a  
6 framework for how to use FORMAN within management  
7 planning.

8                   I have also been involved in the  
9 development of the crop planning software and have some  
10 involvement with the development of the harvestable  
11 generator developed by Petawawa, by the federal  
12 government.

13                   MS. BLASTORAH: And I believe the Board  
14 is familiar with all of those terms. If the court  
15 reporter is not familiar with them, I appreciate that  
16 she is not regularly in attendance at this hearing,  
17 perhaps we can give her the spelling of those various  
18 models on the break.

19                   I would ask that Mr. Callaghan be  
20 qualified as a professional forester with particular  
21 expertise in wood supply analysis and yield regulation  
22 and the development and application of forest  
23 management modelling tools.

24                   MADAM CHAIR: Any objections? Then Mr.  
25 Callaghan shall be so qualified.



1 MS. BLASTORAH: Thank you, Madam Chair.

2 I think the next order of business would  
3 be to mark as an exhibit the first package of overheads  
4 we will be referring to this morning which relate to  
5 Mr. Ward's evidence, and I have provided those to the  
6 Board. They have a cover page entitled, Fire History  
7 in Ontario. It is a package of 12 pages copied  
8 single-sided, and we do have copies of those for the  
9 parties as well. I am afraid I have lost count of the  
10 exhibits.

11 MADAM CHAIR: That is Exhibit 2263.

12 MS. BLASTORAH: Thank you.

13 ---EXHIBIT NO. 2263: Package of overheads entitled  
14 Fire History in Ontario.

15 MS. BLASTORAH: And if I could ask Mr.  
16 Rempel to assist us with the overhead. I am sorry, I  
17 am getting ahead of myself here. Mr. McNicol is going  
18 to give a brief overview of what the evidence of this  
19 panel will deal with before we begin with the first set  
20 of overheads.

21 MR. McNICOL: Very brief, Madam Chair,  
22 Mr. Martel, just to give you bit of a road map to Panel  
23 2.

24 One of the first large sub-series that we  
25 will be dealing with is clearcut silvicultural system.

1 To set the context, which will be carrying on those  
2 discussions, Mr. Ward will lead off with a discussion  
3 of natural disturbance patterns through fire. I will  
4 follow that presentation with what is currently  
5 happening in the forest today with respect to  
6 application of clearcut silvicultural system in terms  
7 of the range of sizes that can be expected.

8 Mr. Kennedy will take us into a new area  
9 that will look at the range of sizes that MNR -- sorry,  
10 the methodology with which MNR wishes to address this  
11 question of clearcut size that has been a question  
12 before this hearing for a number of years.

13 Mr. Waito will give you a brief report on  
14 the costing that has become known as the costing  
15 exercise, the examination of natural versus artificial  
16 regeneration techniques, and flowing from that, Mr.  
17 Callaghan will talk to the wood supply implications of  
18 those various scenarios that were looked at.

19 The next large subject will be monitoring  
20 and reporting. Within that Dr. Steedman and Dr.  
21 Abraham will speak to the programs that have been set  
22 up to look at the effectiveness of the moose habitat  
23 and fisheries habitat, national guidelines, the effects  
24 and effectiveness.

25 Mr. Kennedy will move on to timber

1 management monitoring, looking at the monitoring  
2 provisions and TMPs and also speak to the compliance  
3 monitoring through area inspections.

4 Reporting will be looked at by Mr.  
5 Kennedy, both at the forest management unit level and  
6 at the provincial level, and finally Mr. Kennedy will  
7 end up with audits. That is a brief road map.

8 And as Ms. Blastorah indicated, the  
9 purely overqualified Dr. Rempel has acceded to help us  
10 with our overheads. So if we could ask Rob to take his  
11 place, we will lead off with Mr. Ward, to talk to us  
12 about fire history.

13 MR. WARD: Before I begin, just one small  
14 note in the overhead package that you are going to be  
15 following along. The first two maps, which are  
16 actually pages 3 and 4, are reversed in the package  
17 from the order in which they appear.

18 I would like to speak briefly this  
19 morning about the relationship of forest fire losses  
20 and clearcut size in Ontario.

21 Earlier in these hearings witnesses for  
22 Forests For Tomorrow discussed issues about timber  
23 harvesting and their concern about the size and impacts  
24 of clearcuts.

25 Some of this evidence felt also that the

1 level of forest fire losses in Ontario and the additive  
2 effect of fire and harvesting on the total level of  
3 forest disturbance experience in the area of the  
4 undertaking.

5 It was suggested that although MNR is  
6 effective at suppressing small forest fires, there are  
7 as many large fires now as there were in the past, and  
8 the additive effect of large fires and large clearcuts  
9 is creating a greater level of landscape disturbance,  
10 and in particular more large patches of disturbance  
11 than occurred in the past.

12 It was argued this is undesirable and  
13 supports the contention that there should be strict  
14 limits placed upon the size of clearcuts.

15 The Ministry disagrees with these  
16 contentions. I would like to demonstrate the  
17 following: First, current fire management practices  
18 have demonstrably reduced the total annual area burned  
19 in the area of the undertaking.

20 We estimate the current annual fire  
21 losses are about 10 per cent of the area burned by fire  
22 before the advent of organized fire suppression.

23 Secondly, this reduction has been  
24 achieved by greatly reducing the numbers of large fires  
25 such that currently 90 per cent of all fires in the



1 area of the undertaking are contained at less than four  
2 hectares in size.

3 Thirdly, the average annual area fire and  
4 harvest disturbance combined in the area of the  
5 undertaking is less than half the estimated level of  
6 historical fire losses alone on the same area.

7 And finally, therefore, fire suppression  
8 has greatly increased the relative number of small  
9 fires and greatly reduced the occurrence of  
10 intermediate and large size disturbances.

11 From a spacial perspective, limiting  
12 clearcut size would actually run counter to the  
13 objective of replicating the natural distribution of  
14 disturbance of patch size in the area of the  
15 undertaking.

16 I would like to speak for a minute about  
17 current fire management practice in Ontario. The  
18 Minister of Natural Resources is responsible for the  
19 management of forest fires that occur in the area  
20 defined in the Forest Fires Prevention Act as the fire  
21 region.

22 At this point we should have what is  
23 actually the second map in the package. I will show it  
24 quick first as Dr. Rempel has it on the screen.

25 In the south, the limit of the fire

1 region is virtually coincident with the boundary of the  
2 area of the undertaking.

3 In the north, we are responsible up to 54  
4 degrees north latitude. A significant area beyond the  
5 limits of the undertaking.

6 It should be noted that we do not attempt  
7 to suppress every fire that occurs within the fire  
8 region. Many fires are allowed to burn with limited or  
9 no fire fighting action.

10 The evidence presented on behalf of  
11 Forests for Tomorrow, did not acknowledge the  
12 difference in fire losses between suppressed and  
13 unsuppressed fires. Therefore, their conclusions  
14 concerning the effectiveness or lack of effectiveness  
15 of the Ministry's fire suppression program are  
16 misleading.

17 Fire has always been a natural force in  
18 on Ontario's forests. The boreal, and to a large  
19 extent the Great Lakes-St. Lawrence, are disturbance  
20 based forests. Fire in the presuppression era control  
21 up to a great extent the mosaic of forests types and  
22 age-class distribution in the area of the undertaking  
23 and elsewhere. Based on influencing factors such as  
24 climate, weather, terrain, vegetation species and  
25 associations and human activity.

1                   The Minister of Natural Resources  
2       operates a fire suppression program not because fires  
3       are inherently bad or an unnatural part of the forest  
4       environment, but because people place a value on the  
5       forest and its resources and uncontrolled fire may  
6       place those values at risk.

7                   We thus respond to fires based on the  
8       predicted behavior of the fire, its potential impact on  
9       people, property and values; including timber values,  
10      wildlife habitat, tourism and other cultural and social  
11      features.

12                  We must also weigh the values at risk  
13      against the estimated cost of responding and  
14      suppressing fire. For these reasons we do not respond  
15      to all fires in the same manner.

16                  In much of the fire region, the most  
17      appropriate response is to detect and suppress the  
18      fires of the smallest size possible. However, in other  
19      areas, the most appropriate response may be to allow  
20      the fire to burn unsuppressed fulfilling its natural  
21      ecological role.

22                  Within our regional fire management  
23      strategies, we have created fire management zones which  
24      provide guidance as to the type of fire response  
25      generally required in each zone.

1                   We have an intensively protective zone,  
2       shown here as the large portion of the map.

3                   MS. BLASTORAH: Q. We are now looking at  
4       the map which is included in Exhibit 2263 at page 3.

5                   MR. WARD: A. In this zone virtually all  
6       fires are aggressively detected and attacked.

7                   Conversely in the far north, beyond the  
8       local communities and other identified values, we  
9       provide an extensive level of protection where on most  
10      fires we take limited or no action at all, based on the  
11      values at risk and the cost of responding to a fire.

12                  Between these zones there is a narrow  
13      band where the forest and other resources are currently  
14      not allocated, but may be accessed in the foreseeable  
15      future.

16                  In this measured protection zone we do  
17      attempt to find and suppress all fires in small sizes.  
18      If these initial attempts fail, we must decide whether  
19      to continue or terminate the suppression action.  
20      Again, based on the values at risk and the cost of  
21      continuing an aggressive suppression effort.

22                  We can see also here that the intensive  
23      and measured zones together, correspond very closely  
24      with the area of the undertaking.

25                  Thus in discussing fire losses in Ontario



1 and the effectiveness of our fire suppression efforts,  
2 we need to distinguish losses in the area of the  
3 undertaking where our objective is primarily to  
4 suppress all fires at small sizes, from losses in the  
5 extensive fire management zone, where we take limited  
6 or no action on most fires, and the area of fire  
7 disturbance is representative of a presuppression fire  
8 regime.

9 Q. Mr. Ward, just before we leave that  
10 overhead, am I correct that the solid lines indicated  
11 on the map shows the area of the undertaking and the  
12 dash line across the top shows the top of the boundary  
13 between the extensive fire protection zone and the  
14 measured fire protection zone and the dash and dotted  
15 line one the map indicates the boundary between the  
16 measured fire protection zone and the intensive fire  
17 protection zone?

18 A. That is correct. The solid line is  
19 the area of the undertaking on both the north and the  
20 southern boundaries. The dash line indicates the  
21 limits, northern limits of the measured zone and the  
22 dots and dashes show the northern limit of the  
23 intensive zone.

24 Q. Thank you.

25 MADAM CHAIR: Mr. Ward, could you remind

1 the Board what date marks the beginning of this  
2 suppression era?

3 MR. WARD: In general, in Ontario, we use  
4 1917 as what we consider to be the beginning of the era  
5 of organized suppression. There were efforts prior to  
6 1917, as far reaching as far back into about 1885, when  
7 the first fire rangers were hired, but in general we  
8 have considered 1917, which was the date of which the  
9 Ontario Forestry Branch was formed and the year in  
10 which the first Forest Fires Prevention Act was  
11 proclaimed as the effective date or a convenient date  
12 to start.

13 Obviously there has been a progression of  
14 improvement in fire suppression techniques and  
15 effectiveness of fire suppression since then.

16 So in general, we are talking in the  
17 early part of the century in terms of an approximate  
18 boundary between the pre-suppression and the organized  
19 suppression era.

20 The Forests for Tomorrow evidence did not  
21 acknowledge the difference in fire losses between these  
22 zones or between suppressed and unsuppressed fires.

23 To draw a relevant conclusion about the  
24 effectiveness of modern fire suppression, we need to  
25 compare past and current levels of fire disturbance on

1 a common land base; that is the area of the  
2 undertaking.

3 If I could speak briefly about this issue  
4 of the pre-suppression fire era. We do not have an  
5 exact picture of the nature of the forest landscape  
6 prior to the fire suppression era. However, numerous  
7 researchers have studied the fire history of the  
8 forests of this period in or closely adjoining the area  
9 of the undertaking.

10 MS. BLASTORAH: Q. We are now looking at  
11 page 5 of the overhead, which is marked as Exhibit  
12 2262.

13 MR. WARD: A. These fire history studies  
14 have been conducted in different forest types and  
15 different areas, but the common thread is that the fire  
16 was a frequent and dominant event in these forests.

17 These studies showed that the fire cycle,  
18 the interval between the occurrence of what were  
19 generally stand replacing fires, averaged well under  
20 100 years in the pre-suppression era.

21 Now, this does not mean of course that  
22 every stand would burn like clockwork every 40 or 60 or  
23 37 years. Some areas would burn more frequently, some  
24 areas very infrequently. Again, based on climate,  
25 terrain, forest type and also the need to have a

1 presence of an ignition source. Climate and weather  
2 also caused great variation in the area burned from  
3 year to year and over somewhat longer periods.

4 But in general, averaged over a long  
5 period and over a large area, estimating the fire  
6 return interval is a useful and well-accepted technique  
7 in forest fire research.

8 We believe that a 65 year fire return  
9 interval is a reasonable estimate of the fire cycle  
10 across the area of the undertaking in the  
11 pre-suppression era.

12 Another way to look at the fire cycle is  
13 to estimate the proportion of the land base that will  
14 be burned annually in a given fire regime.

15 A 65 year fire return interval results in  
16 one and a half per cent of the forest land base being  
17 burned annually, on average.

18 We can then calculate the total average  
19 annual area burning.

20 If we use the total area of the current  
21 intensive and measured protection zones, which  
22 correspondence very closely to the area of the  
23 undertaking, we would find the following; with a 65  
24 year fire cycle which is equivalent to a 1.5 per cent  
25 average annual area burn, this would yield an annual



1 area burned in total of about 700,000 hectares in the  
2 pre-suppression area.

3 Q. We are now looking at page 6 of  
4 Exhibit 2263.

5 A. We can compare that to the current  
6 known level of fire losses in the same area; the area  
7 of the undertaking.

8 In the period from 1976 to 1990, the  
9 average annual area burned by wildfires in the  
10 intensive and measured fire management zones was 81,059  
11 hectares. This means that .173 per cent of the total  
12 area burns on an annual basis and this is equivalent to  
13 a fire return interval of 578 years.

14 We are, therefore, confident in our  
15 contention that current fire suppression efforts have  
16 reduced the total levels of fire losses in the area of  
17 the undertaking to about 10 per cent of the level in  
18 the pre-suppression era.

19 In comparison, total harvest disturbance  
20 in the area of the undertaking in the period from 1986  
21 to 1989, as been given previously in these series as  
22 being about 225,000 hectares annually.

23 When the average annual fire losses of  
24 about 81,000 hectares are factored in, total  
25 disturbance levels are well under half the estimated

1 level of fire losses alone in the pre-suppression era.

2 Q. And by total disturbance, you mean  
3 the combination of fire disturbance and clearcutting;  
4 is that correct?

5 A. Total fire losses and total harvest  
6 disturbance of whatever cutting system.

7 Q. Thank you.

8 A. If we turn now to the issue of  
9 suppression effectiveness. Forests for Tomorrow  
10 evidence contended that MNR was successful in fighting  
11 small fires, was ineffective in controlling large  
12 fires. Again we would disagree.

13 To support this we need to compare the  
14 distribution of fire sizes in the current fire  
15 suppression regime against the range of fire sizes  
16 observed when the fires are allowed the burn  
17 unsuppressed.

18 Our data for the area of the undertaking  
19 for the 1976 to 1990 period, shows this distribution of  
20 fire sizes.

21 Q. And this is page 8 of Exhibit 2263.

22 A. We can see here a large number of  
23 small fires, and a rapidly declining number of fires in  
24 the intermediate and larger sizes. In fact, over 90  
25 per cent of all the fires in this intensive measure

1 fire management zone are contained at less than four  
2 hectares.

3 Just to clarify the graph, which is  
4 perhaps not -- the X axis on the bottom is probably not  
5 terribly clear. The bar on the far left are fires up  
6 to .1 hectares in size. The second bar from the left  
7 if from .2 to 4 hectares in size and subsequently  
8 across the page, 4 to 40 hectares, 40 to 200, 200 to an  
9 thousand, a thousand to 10,000 and so on.

10 MS. BLASTORAH: Madam Chair, on page 8 of  
11 the package of overheads, the decimal point is very,  
12 very faint. So I just draw that to your attention.  
13 The typing is quite small.

14 MR. WARD: Again, just to reiterate here,  
15 if we add up the percentage of the total fires recorded  
16 in the zone for the first two bars or the first two  
17 size classes, you will find in excess of 90 per cent of  
18 all fires being contained at less than 4 hectares.

19 Obtaining a similar estimate of fire size  
20 distribution from a pre-suppression fire regime is a  
21 little bit more difficult than estimating the basic  
22 fire return interval.

23 However, we do have a surrogate measure  
24 of an unsuppressed fire regime. We can examine the  
25 distribution of fire sizes for the extensive fire

1 management zone where we do have empirical data for the  
2 1976 to 1990 period, and we should recall that the  
3 extensive fire management zone lies just to the north  
4 of the area of the undertaking.

5 I am talking about the fire occurrence  
6 between the limits of the measured zone shown in the  
7 lightly dotted line and up to the limits of fire region  
8 in the larger dotted line at about 54 degrees north  
9 latitude.

10 MS. BLASTORAH: Q. That is page 9 of  
11 Exhibit 2263.

12 MR. WARD: A. Since the majority of  
13 fires in this zone have limited or no action taken on  
14 them, we can get a general distribution of fire sizes  
15 typical of the non-suppression situation.

16 You can see here on the overlay the  
17 distribution fire size classes from the extensive zone,  
18 which is shown in the hatched bars. On top of the  
19 graph we saw earlier illustrating the fire size  
20 distribution for the intensive and measured zones.

21 We can see an obvious difference in the  
22 distribution. In the non-suppression regime there is  
23 the hatched bars from the extensive fire management  
24 zones. There is much more even, if you like,  
25 distribution of sizes, distribution of fires, I should



1 say, across the range of sizes.

2 The net effect of fire management  
3 requires suppression and is a dramatic reduction in the  
4 number of fires in the intermediate and larger size  
5 classes in the suppression area, and at several times  
6 greater proportion of fires in the small size classes.

7 Q. And this is page 10 of Exhibit 2263  
8 and, Madam Chair, just for your reference, this is the  
9 same graph that is included at page 17 of tab 3 in  
10 Panel 2, of Mr. Ward's written material.

11 A. Now, we need to deal not just with  
12 the percentage of fires, as we have looked at in this  
13 graph, but also the area burned by the size of fires.  
14 And again, we have current data on the area burned by  
15 size class in the area of the undertaking for the past  
16 15 years.

17 We can observe here that it is true,  
18 despite the reduction in the number of large fires, the  
19 few large fires that do occur still account for most of  
20 the area burn, and this is true of any fire management  
21 agency in North America.

22 Q. And this is page 11 of the package of  
23 overheads referred to as 2263. And, Mr. Ward, am I  
24 correct that this graph or some form of this graph is  
25 included in your written material at page 19?

1                   A. This graph appears in the written  
2 material. I will take your word that it is on page 19.

3                   Just briefly to make sure we have the  
4 message here, this shows actual empirical data average  
5 annual area burned in the intensive measured fire  
6 management zone, which is essentially equivalent to the  
7 area of undertaking in the recent -- in the past 15  
8 years, and I will say that there is the area burned up  
9 to say even the thousand hectare class is relatively  
10 insignificant. The bulk of the area burned is  
11 inevitably contained by a very few number of larger  
12 fires.

13                  Q. And, Mr. Ward, before we leave this  
14 graph, is there anything the Board should know about  
15 the way this graph has been put together? Is it a  
16 standard graph that can be interpreted just as it  
17 appears or is there anything special they should know  
18 or attempt to interpret it?

19                  A. The only thing that may come to mind  
20 is there has been some questions about why the size  
21 class ranges are such odd numbers, and this is  
22 basically an artifact from the days of imperial measure  
23 when the areas were -- when we measured fire sizes in  
24 acres, these were nice numbers; 5 to 10, 10 to 100, 10  
25 to 500 and so on.

1           For historical reasons, unclear to me, we  
2       continue to use those size classes up to the 200  
3       hectare limit. Beyond that we have then gone to the  
4       more logical breakdown using factors of 10.

5           Q. And am I correct then that this graph  
6       is non-linear?

7           A. That is right. You could not try to  
8       make a general statement about the form of the  
9       distribution saying that it is X an inch lower or  
10      linear or anything else, because the X axis -- the size  
11      classes are neither linear nor truly logarithmic. They  
12      are something in between.

13          Q. Thank you.

14          A. Now, we also need to estimate the  
15      approximate distribution of area burned by size class  
16      that we would have seen in the area of the undertaking  
17      in the pre-suppression era, and we can do this by doing  
18      a little bit of arithmetic.

19                If we take the percentage area burned by  
20      size class that we currently observe in the extensive  
21      fire management zone, which we feel is a reasonable  
22      representation of an unsuppressed or pre-suppression  
23      fire regime, if we apply that fire size distribution  
24      against the total area we estimated was burned in the  
25      pre-suppression era in the area of the undertaking,

1 which was about 700,000 hectares, we can then calculate  
2 an estimated area by size category prior to the fire  
3 suppression evidence.

4 So in this graph the black bars or the  
5 solid bars represent the same graph we just observed.  
6 Actual empirical data on true fire size classes in the  
7 area of the undertaking over the past 15 year period.

8 The hatched bars represent an estimated  
9 area burned by size class using the current fire size  
10 distribution extensive or mostly unsuppressed fire  
11 management zone applied against our calculated total  
12 fire losses of 700,000 hectares from the area of the  
13 undertaking in the pre-suppression era.

14 Q. And, Mr. Ward, the little break in  
15 the two bars, the two hatched bars on the right-hand  
16 side, what do they represent?

17 A. In order to have the -- because the  
18 area burned in the large size classes in the  
19 pre-suppression era was calculated being so large, in  
20 order to have the solid part of the bars, the black  
21 bars show up at all, we had to artificially compress  
22 the scale. If we put the Y axis scale up to 475,000,  
23 the black bars would barely show above the X axis at  
24 all.

25 Q. And if you had shown the hatched bars



1 proportional, like shown the black bar as it shown  
2 there and shown the hatched bar in its full height --

3 A. The hatched bar would have been  
4 somewhere above the top of the screen.

5 Q. Thank you.

6 A. As we have just discussed, we can see  
7 striking evidence that current fire suppression  
8 packages have drastically reduced the area burned in  
9 the intermediate and larger size classes compared to  
10 the estimated historical levels of fire disturbance.

11 We would have to conclude that the fire  
12 suppression program in Ontario has resulted in a  
13 significant decrease in fire disturbance overall  
14 compared to historic levels, and that this reduction  
15 has been achieved primarily by dramatically limiting  
16 the number of fires exceeding 4 hectares in size.

17 As illustrated in this graph, in all size  
18 classes above 4 hectares, there is significantly less  
19 area burned now in the area of the undertaking than  
20 there was in the past.

21 Limiting clearcut size to say 100 or even  
22 200 hectares, would not restore some natural pattern of  
23 landscape disturbance in the era of the undertaking.  
24 It would actually further increase the proportion of  
25 small disturbance patches and further reduce the number

1 of intermediate and larger disturbances from what we  
2 would have found in the natural forest, and this is in  
3 support of what I believe Drs. Welsh and Thompson spoke  
4 of just a few weeks ago at these hearings. Thus is the  
5 contention that clearcut size should be restricted  
6 because any harvest disturbance in these intermediate  
7 and larger size classes, when added to known fire  
8 losses would exceed the natural or historic level of  
9 disturbance in those size classes is simply unfounded.

10 To summarize, current fire management  
11 practices have demonstrably reduced the total annual  
12 area burned in the area of the undertaking.

13 We estimate the current fire losses are  
14 about 10 per cent of the area burned by fires before  
15 the advent of organized fire suppression.

16 This reduction has been achieved by  
17 greatly reducing the numbers of large fires, such that  
18 currently 90 per cent of all fires are contained at  
19 less than 4 hectares.

20 Q. And we are back now to page 2 of your  
21 package of overheads, Mr. Ward?

22 A. I was telling you what I have told  
23 you.

24 Thirdly, the average annual area of fire  
25 and harvest disturbance combined in the area of the

1 undertaking is less than half of the estimated level of  
2 historical fire losses alone in the same area, and  
3 finally, fire suppression has greatly increased the  
4 number of small fires, while greatly reducing the  
5 occurrence of intermediate and large size disturbances.

6 From a spatial perspective, limiting  
7 clearcut size would actually run counter to the  
8 objective of replicating the natural distribution of  
9 disturbance patch size in the area of undertaking, and  
10 that is end of my presentation, Madam Chair.

11 Q. Thank you, Mr. Ward.

12 MS. BLASTORAH: I believe we are going to  
13 move on now to Mr. McNicol's presentation, and we have  
14 some additional overheads to mark in conjunction with  
15 that. We will distribute those now.

16 The next package consists of 12 pages,  
17 copied single-sided in a package with a covering sheet  
18 entitled, "Clearcut Silvicultural System: Current  
19 Practice and Environmental Guidelines for Timber  
20 Management."

21 I believe we may have provided those to  
22 the Board already. Is that correct, Madam Chair? If  
23 not, we will give those to you now. It looks like  
24 this.

25 MADAM CHAIR: No, the only one we have,

1 Ms. Blastorah, is the fire history.

2 MS. BLASTORAH: Okay. We will provide  
3 those to you now and we also have copies for the  
4 parties, although I am not sure whether our court  
5 people may have taken those. We will round some up and  
6 distribute those as well.

7 MADAM CHAIR: This will be Exhibit 2264.

8 ---EXHIBIT NO. 2264: Package of 12 pages with covering  
9 sheet entitled, Clearcut Silvicultural  
10 System: Current Practice and  
11 Environmental Guidelines for Timber  
12 Management.

13 MS. BLASTORAH: Q. Mr. McNicol, whenever  
14 you are ready.

15 MADAM CHAIR: Mr. McNicol, could you read  
16 the title into the record, please.

17 MR. MCNICOL: I am sorry, the title of  
18 this exhibit is Clearcut Silvicultural System; Current  
19 Practice and Environmental Guidelines For Timber  
20 Management, and the piece of my story in this is an  
21 examination of current practice.

22 As a result of a Board interrogatory, we  
23 undertook to examine the range of clearcut sizes in 17  
24 approved plans; plans approved in 1991.

25 What we found in examining those plans  
really was no surprise. As Mr. Ward has indicated, as



1 nature produces a range of patch sizes, we found a  
2 range of sizes that existed as well in examination of  
3 these plans. Certainly not to the same extent, but a  
4 range nonetheless.

5 Nature produces perhaps a larger natural  
6 size range in the more northern boreal forest. That  
7 was reflected in many of these plans which were from  
8 that area.

9 The Great Lake-St. Lawrence forest type,  
10 given its nature, naturally sustains a smaller natural  
11 size range disturbance. Again, that is reflected in  
12 the plans that come from that particular area.

13 The configuration of patch sizes is  
14 controlled by many factors; land form, stand types and  
15 boundaries, soils and drainage. These effect not only  
16 the natural disturbance patterns, but also those  
17 disturbance patterns created by man through timber  
18 management.

19 The clearcut size, however, is also  
20 affected by guideline application; most notably in the  
21 northern boreal forest by the application of the Moose  
22 Habitat Management Guidelines.

23 As the Board has heard, those guidelines  
24 were introduced in 1986. They were subject to interim  
25 direction that was introduced in 1989, which there has

1       been much discussion about, but in essence what that  
2       interim direction put forward was the necessity for  
3       plans to record clearcuts that exceeded 260 hectares  
4       and provide some rationalization for that.

5                   MS. BLASTORAH: Q. The table that you  
6       see in the first page of Exhibit 2264, shows a  
7       percentage by size class of the clearcuts in these 17  
8       plans that were analyzed.

9                   On the left-hand side of the table you  
10      will see the words, "low, moderate and high  
11      capability." That refers to moose production  
12      capability which, as the Board is aware, is a way in  
13      which the flexibility inherent in the Moose Habitat  
14      Management Guidelines is dealt with; i.e., in those  
15      areas where you have moderate to high capability, the  
16      intent is to provide rigorous application of Moose  
17      Habitat National Guidelines. In those areas where the  
18      capability is low, to relax the Moose Habitat  
19      Management Guidelines.

20                   So in the first line of that table you  
21      see combining all of the areas, all of the plans. That  
22      includes those plans that have the bulk of their land  
23      area in low capability, as well as those plans that  
24      were moderate or high.

25                   If we look at the first line of data, 60

1 per cent of the clearcuts occurred in the one to 130  
2 hectare size range. In the next size category, up to  
3 259 hectares, 26 per cent and 14 per cent in the 260  
4 hectare or greater.

5 Looking only at those plans where the  
6 capability was moderate or high for moose production,  
7 i.e., eliminating the low plans, dealing with  
8 significant amounts of low moose production capability,  
9 as one might expect, the number or percentage of cuts  
10 in the to 130 hectare category increased and the number  
11 in the 260 hectare or greater category decreased.

12 Irrespective of how you look at the  
13 information, I guess the message is here, most  
14 clearcuts that are occurring now over the bulk of the  
15 area of the undertaking, are occurring in a size  
16 category of less than 130 hectares.

17 There was some discussion with the  
18 introduction of interim direction, a suggestion that  
19 the Moose Habitat Management Guidelines had indeed been  
20 rewritten. That the optimal size range that is spoken  
21 to in the Moose Habitat Management Guidelines, 80 to  
22 130 hectares had indeed been increased to 260 hectares.  
23 That that now was the new target, if you will, for  
24 clearcut size.

25 We would submit that this data does not

1 support that contention.

2 Unless there are any questions, that  
3 concludes my piece of this story. Mr. Kennedy will be  
4 making a presentation now with respect to a new concept  
5 that MNR is dealing with, the environmental guidelines.

6 MR. MARTEL: Just before you do, I am  
7 just going by memory, but was Dr. Euler's evidence, and  
8 I am just looking for clarification, that MNR was  
9 trying to move away from any - in the long run - any  
10 consideration of clearcut sizes in terms of figures.  
11 Is that MNR's position? That figures will not be --  
12 the size hectares will not be the issue at all, but  
13 other considerations.

14 MR. McNICOL: I think Dr. Euler did  
15 indeed make that point, that size, as the only  
16 criterion with respect to looking at disturbance -- the  
17 only criterion that you look at with respect to  
18 disturbance would be the wrong approach to take.

19 That there are other criteria that must  
20 be examined in terms of shape, certainly the  
21 configuration of cuts have an impact on the utilization  
22 of those cuts by various species. So that size is not  
23 the single perhaps most important criterion. It is  
24 probably the easiest one to measure, but he did suggest  
25 that size was not the only factor, yes.



1                   MR. MARTEL: I want to ask then, where  
2 does - and I have heard MNR take the position  
3 frequently that MNR as the guardian of the forest on  
4 behalf of the public, the owners - where do you put in  
5 perspective or how do you put in perspective the  
6 overwhelming concern of the public that their forests,  
7 they do not care at this point in time about all the  
8 niceties of landscape management or biological  
9 diversity. They resent, at this stage in the game, and  
10 most of the evidence has indicated that, big clearcut.  
11 And how do we take that into consideration when we say  
12 we are managing the forest on behalf of the public, but  
13 on the other hand we say, but size isn't part. It is  
14 only one of the considerations and not really the most  
15 important one in the final analysis. How do we deal  
16 with that?

17                   MR. McNICOL: I would suggest, Mr.  
18 Martel, that you hit the nub of a really significant  
19 challenge for MNR, and that challenge will relate to  
20 the public education aspect of any approach that MNR  
21 wishes to proceed upon that will not address  
22 significantly, in the public's mind, this issue of  
23 clearcut size. And when I say address specifically, is  
24 what I am saying is, does not regiment or somehow  
25 control the size of clearcuts in some manner.

1                   So you are quite right. It is an issue  
2                   that will need management, and it is a challenge from a  
3                   public education standpoint, is to get that message  
4                   across.

5                   I think Mr. Kennedy, in that this is a  
6                   subject area that he will be addressing in the next  
7                   presentation. I think he wishes to add something at  
8                   this time.

9                   MR. KENNEDY: Well, Mr. Martel, I do  
10                  believe that our new implementation manual that we are  
11                  referring to as an environmental guideline for timber  
12                  management activities is a first step in an effort to  
13                  ease the public's mind about the subject matter of  
14                  clearcutting.

15                  We have come up with a new proposal. We  
16                  outlined it at our recent negotiation sessions. It  
17                  seems to have been received as a step in the right  
18                  direction, and we are going to outline that for you  
19                  this afternoon or this morning.

20                  I agree with you that the public still  
21                  has some concerns over the subject of clearcutting. It  
22                  is seen daily in the press and the individuals that we  
23                  speak to on the street, open houses, et cetera. It is  
24                  a challenge, as Mr. McNicol has indicated, to balance  
25                  between the public concerns that are raised, the

1 science that is behind our actions and how we come to  
2 grips with being the stewards of the forest.

3 What we put in place is a suggestion for  
4 a new manual. We do hope that it is going to -- or we  
5 do intend it to address operational considerations for  
6 activities of harvest, renewal and maintenance, and we  
7 do hope that it will be able to provide some use to the  
8 public on matters including such things as protection  
9 of the physical environment, as well as dealing with  
10 the subject matter of clearcutting.

11 The guide as we currently have it  
12 outlined deals with two subject areas; one being site  
13 productivity and the other being clearcutting.

14 It is our intention to get underway in  
15 its production very soon. It involves some of the  
16 people that are appearing before you as part of MNR's  
17 reply evidence will be involved in its production, and  
18 as such, we hope to get underway once this reply  
19 evidence concludes. We expect it will take us about 14  
20 to 16 months to complete the document and have it ready  
21 for use in the field.

22 In preparing the document we know that we  
23 need to involve a wide cross-section of people and  
24 hence we have committed in our reply evidence and to  
25 other parties to involve a wide range of experts in its

1 preparation.

2 We think it is going to be necessary to  
3 include not only people who are viewed as experts in  
4 the field, but also those that are representative of  
5 the general public, if you will. Those individuals who  
6 have direct interest it.

7 I say that many of the parties that have  
8 come forward at this hearing have put a lot of time and  
9 effort into the subject matter of clearcutting, and it  
10 is our intention to involve those people in the  
11 preparation of the new guideline.

12 We think that this guideline will, by  
13 necessity, have to take on a different form than some  
14 of our other guidelines.

15 We have described it as having both the  
16 characteristics of being suitable for use in timber  
17 management planning process, but as well contain  
18 guidance that can be used for those involved in the  
19 operational planning or the operational delivery.

20 I know that has raised some concerns and  
21 questions. It has raised some questions internally as  
22 to how can you prepare such a document and make it a  
23 meaningful one to distribute to audiences.

24 We believe it is possible. We have  
25 talked of a variety of ways that can occur, and we have



1 zeroed in on the need to ensure that we when do provide  
2 the final document that we have necessary supporting  
3 material, training material by the way of booklets and  
4 videos for introduction to field staff as well as those  
5 involved in the operation.

6 I would like to think that it will be a  
7 document that will convey the message to the public  
8 that indeed there are controls on clearcutting in place  
9 in Ontario.

10 It is our intention not only to convey  
11 that message, but also to put in place guidance that  
12 will change the on the ground practices.

13 I do believe it will result in changes in  
14 the way we are preparing our plans now and indeed  
15 dealing with the size of them which is often the  
16 characteristic of people and people rights.

17 We have suggested that there be two main  
18 contents to the guideline; one dealing with site  
19 productivity, the other dealing with clearcutting.

20 If you deal with site productivity in  
21 passing, just for a moment, we will be returning to the  
22 civic matter of site productivity with Panel No. 5 when  
23 we have Mr. Ken Armson (phoen) and Mr. Ritch Greenwood  
24 on the stand dealing with that subject matter in more  
25 detail.

1 But I thought I would just briefly  
2 outline how we intend to deal with site productivity in  
3 the guideline in order to provide a brief outline, if  
4 you will, to put in context and also to get some idea  
5 of the kind of information that the guidelines include.  
6 So one of the sections in the manual would deal with  
7 site productivity concerns.

8 We ourselves, at the beginning of our  
9 evidence in-chief, outlined a number of potential  
10 concerns for site productivity matters and Mr.  
11 Greenwood went in to some discussion of the potential  
12 effects of some activities such as harvesting on the  
13 physical environment, and indeed others have come  
14 forward at the hearing, a variety of parties have come  
15 forward and talked potential problems that could  
16 result.

17 We see that it is appropriate now to put  
18 in place some additional guidance to our staff and to  
19 those involved in the operations. Earlier on in the  
20 hearing we did not think it was an appropriate task,  
21 but we have been convinced on the evidence that's come  
22 forward by other parties that it would be advantageous  
23 to consolidate the information that is currently out  
24 there in many of our guidelines and guides, as well as  
25 to convey some cautionary information to people.

1                   We recognize that site productivity can  
2                   be influenced nutrient removal or nutrient displacement  
3                   and by such physical activities as rutting compaction.  
4                   To address those concerns, we think it is appropriate  
5                   to put in place sections in the guideline.

6                   As far as nutrient concerns go, it is our  
7                   intention to describe good practices with regards to  
8                   nutrient concerns and to advise against what would be  
9                   good and bad practices looking at certain combinations  
10                  about site conditions, weather conditions, timing and  
11                  which timber management practices are appropriate or  
12                  inappropriate. We believe that will be a responsible  
13                  way in which to convey information to those involved in  
14                  both planning and in operations.

15                  There is some additional information to  
16                  be said about that in Panel 5 in regards to some  
17                  interim measures that we will be putting in place, and  
18                  we will wait until that time to elaborate on those.

19                  In terms of compaction, there has been  
20                  several witnesses from other parties come forward  
21                  raising concerns about compaction and making  
22                  recommendations that MNR be more responsive to that  
23                  concern.

24                  We have heard that evidence and we think  
25                  that it is a precautionary nature which they have

1       advised us of is worthy of pursuing and hence again we  
2       are looking at putting forward some do's and don'ts  
3       information as well dealing with site compaction, and  
4       we think that that can be best portrayed by under what  
5       site conditions, we have a combination, cell types,  
6       weather conditions and equipment use, and convey that  
7       information of those involved in the operations as well  
8       as in the planning aspects.

9                   MR. FREIDIN: I have heard you say, Mr.  
10       Kennedy, that although MNR has knowledge, the concern  
11       in relation to the two subject matters that you have  
12       identified, nutrient concerns and compaction concerns,  
13       that part of Panel 5 will be to clearly indicate why  
14       the method by which that concern should be addressed is  
15       different if one looks at the details of MNR's approach  
16       in comparison to the approach being advocated by MOE on  
17       the one hand, the nutrient concerns OFAH/NOTO Coalition  
18       in terms of compaction concerns.

19                   MR. KENNEDY: Yes, Mr. Freidin, our Panel  
20       5 will be dealing with the science side of the evidence  
21       dealing with what our review of science in our  
22       experience is shown in the manner which we recommend  
23       the Board look at a term and condition to deal with the  
24       concerns that are raised.

25                   What I am indicating to you here today is



1 the way in which we will take that science and  
2 translate it into on the ground actions for use in  
3 planning and operations. We will wait for use in the  
4 environmental guideline, one of the series of  
5 implementation manuals that we will use for the  
6 planning process.

7 MR. FREIDIN: I just want to indicate to  
8 the Board that there are continuing differences that  
9 will be addressed and explained in detail by the  
10 witnesses in Panel 5.

11 MR. KENNEDY: In arriving at the decision  
12 to prepare an environmental guideline, I had the  
13 opportunity to talk to many of our field staff and to  
14 canvass them about recommendations as to would such a  
15 document be well received, could it serve a useful  
16 purpose and could individuals think of examples or  
17 information that could be potential subject matters.  
18 And in all cases staff were able to come back with  
19 support for such a document. They thought that it  
20 would be a reasonable way to proceed with ensuring that  
21 a best science and best experience information was  
22 captured and used throughout the province.

23 So the intention of the manual is then to  
24 consolidate the information based both on the local  
25 knowledge, experience of our field staff, experience of

1 our timber management planners, as well as the  
2 scientific experts that we have available to us and to  
3 consolidate the information that is contained currently  
4 in a variety of timber management guides and to package  
5 it into one place where a direction could be sought  
6 when confronted with those particulars.

7 We think that the new guideline will be  
8 well received. We think it will be a document that can  
9 increase awareness to the concern. To ensure that all  
10 of our individuals involved in both operations and  
11 planning are aware that there are both nutrient  
12 concerns and compaction concerns.

13 It will have the effect of raising a flag  
14 of caution and cause people to pause and consider at  
15 the time of prescription setting to seek the guidance  
16 of the manual and other guidance as necessary.

17 In that regard I think it can help both  
18 those involved in the time of prescription setting as  
19 well as, I believe, serve as a useful guide to those  
20 actually delivering the products of the field.

21 I imagine it will also assist the publics  
22 in a way in which we have available information centres  
23 to assure them that in fact we are taking action on  
24 these two important matters.

25 I think consolidating it into one

1 location has proven to be a successful technique in  
2 preparing information for use in the process and other  
3 subject matters. I think that will be a reasonable way  
4 of packaging current expertises out there.

5 And that is a rough outline of how we  
6 would intend to deal with the topic of site  
7 productivity in the environmental guideline.

8 The real focal point of the guideline,  
9 however, will be the clearcut or clearcutting subject  
10 matter.

11 Mr. Martel, this is a subject which has  
12 been discussed widely at the hearing and continues to  
13 be discussed in a public forum. I can sit here today  
14 and tell you that it has been a subject matter of great  
15 discussion with MNR and it is intended to be a response  
16 to that public concern while knowing that we face the  
17 challenge as Mr. McNicol says, in looking at science  
18 base and our responsibility as resource managers.

19 It is a tough challenge. We think that  
20 is a beginning. We are now coming forward and saying  
21 that we are prepared to address the subject of cut  
22 sizes in their distribution and that we will be  
23 providing direction of harvest block layout to deal  
24 with those two matters, and we propose the risk  
25 guideline as the vehicle by which to provide that

1 direction.

2 It will be a new direction, and simply  
3 put, we expect it to take the form of a series of  
4 ranges of clearcut block sizes rather than a single  
5 number representing a fixed size.

6 There has been some suggestions for use  
7 of material and indeed there are suggestions of  
8 pre-fixed size limits in place in a number of  
9 jurisdictions, and we are aware that some jurisdictions  
10 have used an arbitrary limit approach in controlling  
11 clearcut sizes, but there appears to us to be some  
12 movement away from this rigid approach.

13 The Board did ask us an interrogatory in  
14 that particular matter, and the Board interrogatory  
15 number 18 to MNR, we did fairly a extensive search of  
16 documents that were available to us and our contacts  
17 within U.S. forest service and documentation which they  
18 were able to provide for us.

19 We have attempted in summary form, over a  
20 series of about 10 pages, I believe, to provide  
21 examples of the kinds of regulations, the kinds of  
22 regional guides that are in place in the U.S. forest  
23 service and the kind of information that is contained  
24 in them including provisions for both arbitrary fixed  
25 limits as well as the exception reporting.



1 I do not intend to go into any detail in  
2 those. They are provided in the response to the  
3 Board's interrogatory number 18.

4 However, by way of illustrating the  
5 point, MNR did include an example from a more recent  
6 record of decision involving a particular area on the  
7 U.S. national forest, and that deals with a 1991  
8 decision with the sunken camp area record of decision,  
9 with Chequamegon Nation Forest. I notice that this  
10 record of decision caused some interest in the  
11 interrogatory process.

12 So I thought I would take a moment and  
13 just highlight some items out of that record of  
14 decision to illustrate the point that although there  
15 are fixed limits in place and we indeed are moving away  
16 from those.

17 MS. BLASTORAH: Q. Mr. Kennedy, perhaps  
18 just for the record we could spell Chequamegon for the  
19 court reporter. I have it in front of me from the  
20 decision contained in the witness statement. If you  
21 care we could do that. For the record it is  
22 C-H-E-Q-U-A-M-E-G-O-N, National Forest, Chequamegon.  
23 Sorry to interrupt, Mr. Kennedy.

24 MR. KENNEDY: A. On page number 8 of  
25 Exhibit 2264, I have prepared a brief outline of the

1 record of decision, sunken camp area, for the U.S.  
2 forest service.

3 I make the point that MNR's use of the  
4 decision was simply to make note of the documentation  
5 regarding size of harvest blocks.

6 We recognize that the record of decision  
7 is supplying to a particular area within a broader  
8 based resource national plan, but it does provide  
9 information concerning the changes occurring in the  
10 U.S. forest service in terms of fixed size loads.

11 It is our understanding, from reviewing  
12 the numerous pieces of information that we have  
13 obtained, is that national forests service lands have  
14 had in place exceptional reporting provisions as well  
15 as the boys allowed for harvesting of some larger  
16 blocks and this is true in the case of the Chequamegon  
17 National Forest.

18 The record of decision that we are  
19 looking at, when you look at some brief summaries, some  
20 of the numbers contained within the record, make note  
21 of the fact that the clearcut harvest blocks do range  
22 from 10 acres to 918 acres. There are 17 clearcut  
23 blocks that are less than 45 acres. One that comes in  
24 at 63 three acres and three clearcut blocks that are  
25 800 acres or greater. All this in a total area to be

1 harvested of 3,403 acres.

2 Although there is a fair amount of  
3 interesting information prepared in the record of  
4 decision, our use of it was simply to rely on it as an  
5 example of areas in United States, in the national  
6 forest, where there are larger cuts occurring beyond  
7 some of the block size limitations that have been  
8 suggested by people.

9 MR. MARTEL: If I interpret that  
10 correctly, the overwhelming majority of the area is  
11 being cut with large clearcuts. If the total amount is  
12 3,100 acres, three clearcuts alone are 800 acres, only  
13 75 per cent of the area cut will be on three cuts. I  
14 guess I am trying to figure out how that ranges in the  
15 whole of that area.

16 MR. KENNEDY: I believe your  
17 interpretation is correct. That is my understanding of  
18 the situation.

19 It is, however, Mr. Martel, dealing with  
20 just one block of approximately 3,000 acres. The rest  
21 of the natural forest, it is my understanding, is this  
22 is not typical of the cuts occurring on the belt and  
23 forest.

24 Again, we make note of the fact that it  
25 appears to us in other jurisdictions that resource

1 managers are moving away from an arbitrary limit. We  
2 have summarized that information in response to Board  
3 interrogatory number 18 and also in our Reply Statement  
4 of Evidence, No. 2, Exhibit 2258, on page 10, and Madam  
5 Chair, it is not my intention to go into paraphrasing  
6 all of the items listed on page 10. I have simply  
7 listed three here to give an example and a reminder to  
8 the Board that some of the reasons it appears to us  
9 that other resource managers are moving away from an  
10 arbitrary fixed limit, our concerns about  
11 fragmentation, a movement towards landscape management,  
12 concerns about the size of new standards that are  
13 regenerating after smaller harvesting blocks.

14 I think it is true when we look at  
15 evidence that we have presented in response to the  
16 Board interrogatory 18, that in Ontario we are faced  
17 with similar situations.

18 We have outlined a series of natural  
19 management limitations that we are confronted with when  
20 planning harvest block layout, we describe those in  
21 conjunction with our MNR Panel 10B in the clearcut  
22 exercise. Such things as natural limitations is a need  
23 to consider topographic layout and species of trees  
24 growing in certain areas when planning harvest blocks,  
25 as well as to deal with such management limitations as



1 products required by local mills, size and quality of  
2 trees required to meet particular part demands, as well  
3 as such practical limitations as placement of roads.  
4 The variety of factors that influence the size and  
5 shape configuration of clearcut block sizes. The  
6 clearcut blocks and their size.

7 We would make the point that this variety  
8 of natural factors and management limitations have  
9 indeed provided some form of controls on clearcutting.

10 I draw your attention to evidence that  
11 Mr. McNicol just led in conjunction with Exhibit 2264  
12 on page 2, dealing with the range of clearcut sizes  
13 that are currently resulting from our management  
14 practices, and that is from using our variety of  
15 silvicultural guides, as well as such implementation  
16 manuals as the moose and deer guidelines.

17 However, Mr. Martel, as you have pointed  
18 out that there continues to be concern by the public  
19 and that even to date despite our efforts in Ontario,  
20 which we recognize as being sound from the resource  
21 management standpoint, but perhaps not dealing with  
22 public concerns or the public perception head-on, but  
23 indeed there continues to be a concern by general  
24 public in use of the clearcutting methodology.

25 It is for that reason we are proposing a

1 new environmental guideline for timber management  
2 activities and in that guideline I am going to devote a  
3 majority of the guideline to sections dealing with  
4 clearcutting.

5 We do think it will be a challenge to do  
6 so. We are hoping to keep firmly rooted in science as  
7 well as deal with emerging science concerns with such  
8 matters as fragmentation and to attempt to deal with  
9 the public's concerns as well by putting a variety of  
10 experts and interested people in its development.

11 What we do know is that the fixed  
12 arbitrary single number, an upper limit is not  
13 appropriate. It is our reading of where we are across  
14 North America and certainly where we are in Ontario.  
15 The single number is not the way to go.

16 We are instead suggesting that we need a  
17 range. We think that we are a step in that right  
18 direction by looking at the kind of information  
19 presented in the interim direction for the application  
20 of the moose habitat guideline. We feel that needs to  
21 go a step further.

22 Again, like the list of factors to be  
23 considered in developing that range, the factors we  
24 talked about in Panel 10B, a mix of natural measurement  
25 limitations, there is still a need to consider such

1 things as the tree species present, silvicultural  
2 aspects of those tree species, actual geographic  
3 conditions, the forest types, wildlife requirements,  
4 new landscape and biodiversity concerns that we see  
5 emerging here in Ontario. Indeed our staff are  
6 involved in the forefront.

7 We also recognize we do not have full  
8 knowledge on these subject matters; particularly on the  
9 move towards biodiversity considerations and landscape  
10 management, but we feel that it is an appropriate time  
11 to begin. We do have a number of new staff involved, a  
12 number of people with varying expertise, varying  
13 backgrounds and strengths that come to the Ministry and  
14 maybe we can involve them in the production of a new  
15 direction.

16 So it is our intention then to propose  
17 with the guideline a development of ranges of clearcut  
18 block sizes.

19 We see dividing the province up into  
20 eco-regions, and at the moment you see I have got  
21 eco-regions on this page 10 of Exhibit 2264 in quotes,  
22 and by that I am not adopting any particular  
23 classification system at this point. I am just  
24 indicating that what we do will need to be based in  
25 some ecological basis for the ranges for each region.

1 I would think that we would be looking at  
2 the range of four to six different eco regions in the  
3 province for the purposes of this guideline.

4 Within each of those eco regions it would  
5 be our intention to determine what the natural patch  
6 size is and what the natural patch size distribution  
7 is.

8 With patch size we are using our phrase  
9 to indicate the kind of natural patches or forest stand  
10 or groups of forest stands that occur out there today  
11 in the landscape.

12 When I look at -- when I think of  
13 patches, I think of a combination of Black Spruce  
14 swamps as a patch, an opening in the forest as a patch  
15 and a mature Jack Pine stand as patch. I am sure there  
16 are others that have more a scientific interpretation  
17 of the use of the word, but for ease of understanding  
18 that is how I prefer to think of it, as a description  
19 of unique conditions across the landscape. And we will  
20 be looking at those in determining what the natural  
21 distribution and natural sizes of those are.

22 To determine that we intend to use  
23 information based on tree silvics, silvicultural view  
24 to a species, forest stand distribution information  
25 that is available to us through the forest resource



1 inventory and information contained now in our acquired  
2 history records.

3 Using our forest resource inventory  
4 information, we have discussed ways and means of  
5 sorting new inventory information into looking at  
6 average stand sizes by working groups, by different  
7 stand compositions, and we believe in the fashion such  
8 as doing that we can arrive at some information  
9 produced by the experts in terms of patch sizes and the  
10 distribution.

11 In a similar fashion we hope to take the  
12 records that are contained in the fire management  
13 section and subject them to some analysis along with  
14 our fire mapping records and to look at the size and  
15 distribution of fires and their relationship to the  
16 subsequent stands which are made from them.

17 We intend to use some of the information  
18 that has been pulled together by Mr. Ward and his crew  
19 in preparing the earlier evidence, which you have heard  
20 today.

21 With that information in mind we intend  
22 to provide that as background to our variety of experts  
23 and those individuals that are interested in  
24 participating in the process, and we expect we will end  
25 up with a series of ranges for use in the province.

1                   Looking now at page number 11 of Exhibit  
2           2264, we expect that there will be series of ranges and  
3           I would suggest a simplistic view could be small,  
4           medium and large, with possible exceptions.

5                   As far as what the sizes should be, I  
6           don't have a suggestion today as to what they might  
7           turn out to be, but we do think that that is likely  
8           where it will end up.

9                   We think then there will be a need to  
10          provide a guidance on just how much of each one those  
11          ranges would be permitted or required within each one  
12          of the eco-regions. So allowed in terms of that would  
13          be looking at permitted or allowable limit to a range,  
14          and I use the word require to indicate that in order to  
15          meet some biodiversity in the landscape objectives we  
16          do think it would be necessary to establish portions of  
17          sizes to end up with in each range class.

18                  We also recognize that in the boreal  
19          forest conditions that we are dealing with, that there  
20          will likely always be a need for an exception to the  
21          rule, an exception to the ranges.

22                  We have indicated here that to be  
23          responsive to natural events such as bud worm damage or  
24          indeed fire damage and need for salvage operations.  
25          That there we need to consider, in addition to the

1 ranges, provisions for exceptions on full exception  
2 reporting, necessary review and approval mechanisms to  
3 have the exceptions, a proper area, and to ensure that  
4 the exceptions come forward with the supporting  
5 rationale and documentation for the consideration of  
6 those involved in the review role.

7 In our preliminary thinking we know that  
8 again another challenge of the forest is to arrive at  
9 some common terminology and we found that in embarking  
10 upon the clearcut exercise, our Panel 10B exercise, it  
11 was necessary to put forward some operational  
12 definitions for deciding what is a clearcut, when is a  
13 clearcut no longer a clearcut, what is a contiguous  
14 clearcut compared to the single clearcut, the ages of  
15 clearcuts and a variety of other matters.

16 We think the information contained in  
17 Panel 10 that was prepared as a result of an all party  
18 exercise is a very good starting point. We would like  
19 to return to that and consider its use in the new  
20 guideline.

21 In a similar vein we developed a mapping  
22 exercise as part of the Panel 10B exercise. We know  
23 that there is a need to put in place mapping  
24 procedures, mapping conformity. When dealing with  
25 clearcut considerations and that we believe that the

1 Panel 10B again will be a source of information and  
2 that that can be useful in preparing the new guideline.  
3 We envisage that the new guideline would contain then  
4 directions of how to go about the actual mapping for  
5 reporting purposes.

6 With those items in mind then, we would  
7 look at putting into each and every timber management  
8 plan some routine reporting requirements that would  
9 deal with presenting information regarding clearcut  
10 size, distribution or harvest block layout, the sizes  
11 by each range and that information would be available  
12 in its preliminary form at the early stages of the  
13 public consultation process and be included right  
14 through to the end and be included in the draft to be  
15 reviewed by the public.

16 So in that sense the public would have a  
17 real opportunity to see the kind of information that is  
18 prepared in the plan relative to clearcut block sizes  
19 and also have the benefit of the environmental  
20 guideline to look at all the considerations that have  
21 gone into the development of that individual plan.

22 That would be the first time that we have  
23 actually put before the public, information concerning  
24 clearcut block sizes for their consideration and review  
25 and approval role.



1                   We have seen that that is a necessary  
2           step to take to not only deal with the concerns that  
3           have been raised by publics, but we also see it as  
4           pro-active step in that as a group of resource  
5           managers, we see the move toward landscape management  
6           part of this, as concerns will eventually require us to  
7           take greater recognition of the various distribution of  
8           clearcut block sizes, as well as other harvest  
9           techniques. And we think that that is a step in the  
10          right direction.

11                   We have that information shown actually  
12          in the plan, available to review by experts as well by  
13          the public.

14                   It is indicated at the beginning, it is  
15          our intention to deal with various experts and  
16          interested persons during the development of the  
17          exercise.

18                   What I have shared with you today is a  
19          collection of preliminary thinking that our crew has  
20          done. We do not put it forward as the absolute only  
21          way to go. It is simply our best thinking of the  
22          subject matter at this time.

23                   We have suggested the Environmental  
24          Guidelines of Timber Management Activities as a working  
25          title for the document. We may well find that there is

1 a more suitable descriptive form, and indeed that the  
2 content may change during its development. We would  
3 put it forward as a recommendation that we think will  
4 address the two subject matters that had some  
5 discussion through the course of hearing.

6 The purpose of preparing the guideline is  
7 to add it to our implementation manual series; to use  
8 it as one of the documents that will be available  
9 during both the timber management planning process and  
10 prescriptions as well as to be consulted during any  
11 implementation of the plan.

12 We believe it is a responsible way to  
13 respond to the concerns raised by the publics about the  
14 subject matter of clearcutting, as well as some of the  
15 views expressed by other experts that have come before  
16 the Board.

17 We also make note that we think that  
18 although it is a rudimentary form, a preliminary step,  
19 we think that it will assist us in working with a broad  
20 number of -- our broad number of staff involved in  
21 timber management planning and forest industry staff  
22 included, as well as other experts, and we think it  
23 will be able to gain us some experience in the move  
24 towards landscape management and measures to address  
25 ecosystem biodiversity concerns.

1                   Mr. Martel, that is how MNR is attempting  
2                   to respond to the challenge raised to us by the  
3                   difficulty we have in looking at science based  
4                   information and being responsible resource managers  
5                   looking at managing those resources, using science  
6                   information as well as trying to be responsible to the  
7                   general public concerning their wishes and desires to  
8                   manage the forest in a manner that they see  
9                   appropriate.

10                   MR. FREIDIN: Madam Chair, maybe this  
11                   would be an appropriate time to break for lunch.

12                   MADAM CHAIR: All right. Do you want to  
13                   come back at one o'clock then, Mr. Freidin? It is  
14                   11:30. We can go on until twelve or we can break now.  
15                   Whatever your witnesses want to do.

16                   MR. FREIDIN: It up to the panel. Do you  
17                   want to break, Mr. McNicol?

18                   MR. McNICOL: Now.

19                   MR. FREIDIN: We can break now.

20                   MR. MARTEL: Mr. Kennedy, before we just  
21                   finish on this topic, after you develop this manual,  
22                   how do you intend to get it to the public? Has that  
23                   been considered at all? It is one thing to send  
24                   someone a manual or hopefully someone will pick it up,  
25                   but since we have only had a number of witnesses appear

1 before us, there are a lot of other people with the  
2 same concerns, I encountered it on the weekend. I do  
3 not know how many occasions.

4 There has got to be a way of distributing  
5 or conveying what is being done to the public and a  
6 distribution of manuals or getting it nicely tucked  
7 away and done, I am not sure will resolve the problem.

8 Has MNR considered some method of  
9 educating the masses without the concern once the  
10 manual had been developed.

11 MR. KENT: Mr. Martel, I recognize that  
12 that is a challenge also that we face in its  
13 implementation.

14 I can't tell you specifically because we  
15 have not put our mind to it in great detail how we will  
16 accomplish that task. Our preliminary thinking is that  
17 certainly that in the involvement of those people who  
18 are interested in that subject matter, is one way in  
19 which we would attempt to get a broader range of  
20 interest involved in its actual production.

21 We feel that in doing so there is a  
22 certain responsibility that those individuals and  
23 organizations have to take it back to their membership  
24 and supporters and help to spread the new direction.

25 We also think that through the



1 information centres that we hold and the information  
2 centre on timber management planning, that having it on  
3 display and having it front and centre, and having  
4 information contained in the summary plans that  
5 individuals take away, have it listed in the plan, are  
6 all small efforts towards improving the spreading of  
7 the news.

8 We have talked about -- sorry, a smaller  
9 number of us have talked about what other innovative  
10 ways can we use to impart that information. We have  
11 talked of things such as presentations, travelling road  
12 shows to interest groups, annual meetings, to including  
13 information in publications that are put out by other  
14 organizations to their members to advise people of the  
15 new direction.

16 The other point I was going to make, Mr.  
17 Martel, was that I can tell you over the last six,  
18 eight years I have been involved in responding to a  
19 large number of letters that make their way into the  
20 Ministry of Natural Resources system and providing  
21 advice to a variety of individuals in our outfit as to  
22 how to respond to letters dealing with the subject  
23 matter of clearcutting.

24 One of the frustrating and often  
25 difficult tasks in crafting responses to letters to

1 individuals that have raised concerns, is describing to  
2 them the situation we currently have, which is the  
3 subject matter of providing management direction on  
4 controlling harvest block layout. It is not unnoticed  
5 any more. It is not as if it doesn't exist today.

6 The difficulty is that it is contained in  
7 a variety of documents and the silvicultural guides and  
8 the silvicultural aspect of species, for wildlife  
9 matters in moose habitat guideline, in deer habitat  
10 guideline, in a variety of other implementation  
11 manuals.

12 Putting all that into a couple of short  
13 paragraphs in a letter is very difficult. I think that  
14 one of the selling points of this new guideline is  
15 going to be the very fact that it is consolidated and  
16 the fact that it can be referred to as one direction.

17 I have I have observed that in other  
18 jurisdictions efforts are made to produce a variety of  
19 styles of publications dealing with the same subject  
20 matter.

21 I often find a technical guide for use in  
22 planning in operational matters as well as a lay  
23 person's guide to the same subject matter. A brochure,  
24 if you will, is available for public distribution, and  
25 that is another matter that has been talked about,

1       albeit in a smaller group of us as to an additional way  
2       in which we might be able to communicate some of the  
3       results of our implementation manuals.

4                   In our Panel No. 3, which we will be  
5       speaking to later this week I hope, and the butters of  
6       these implementation manuals, I will be making a point  
7       that we do recognize that training and the use of new  
8       and existing manuals, particularly in the introduction  
9       of new programs, the training and the dissemination  
10      information, not only to our planners and those  
11      involved in operations, but also to those general  
12      publics that are coming out to our information centres,  
13      is a very integral part and an important part of  
14      insuring that our program is successful.

15                   So we do recognize the need to get to the  
16      audience that you are speaking of and we will make our  
17      best efforts.

18                   MR. MARTEL: If I could just make one  
19      final observation then. Have you considered, or has  
20      anyone considered to this point in time, since many of  
21      the objections, many of objectors in fact come from  
22      southern Ontario, of using educational television. We  
23      have a network out there and you can express a lot more  
24      clearly by television programming than you can in a  
25      whole series of manuals, because you can deal

1 exclusively with the subject or explicitly with the  
2 subject and show exactly and have commentary. MNR  
3 might consider that. I am not sure they have made much  
4 effort in that direction over the years.

5 MR. KENNEDY: Mr. Martel, I thank you for  
6 that suggestion. I can advise you that we have made  
7 some efforts in that way, but I do not believe we have  
8 in place an organized program to do that.

9 I can advise you that just two weeks ago  
10 I was sitting in a Toronto hotel room late one evening  
11 watching the public television broadcast. I did see  
12 some of our videos that have been produced for purposes  
13 of fire management as well as one on timber management  
14 was showing, although at the time of night was such I  
15 image the audience was not great.

16 I think that you raise a good point. In  
17 preparing our videos that have been now used frequently  
18 in training sessions with those directly involved in  
19 our operations, of course we are providing them free of  
20 charge, we are providing them through a wide  
21 distribution for the educational system, primarily post  
22 secondary, as well as through organizations that are  
23 available to access those in the plan.

24 I will certainly take your suggestion to  
25 heart though in preparing new information on the



1 implementation manuals.

2 MADAM CHAIR: You might notice that the  
3 suggestions come from Mr. Martel and not myself, Mr.  
4 Kennedy. I think there is some times a very narrow  
5 line between public education and propaganda, but we  
6 will leave that to the media experts.

7 Why don't we have a break, have lunch,  
8 and come back at a quarter after one.

9 MR. FREIDIN: Just one point.

10 In terms of the environmental guidelines,  
11 you spoke about its preparation and involvement of  
12 other parties in its development. Once in fact you  
13 have one, and one is applied, would there be an  
14 opportunity for the citizens' committee to be involved  
15 in either its application or be involved in witnessing  
16 how it is applied or used in practice?

17 MR. KENNEDY: Most certainly both in its  
18 production I would expect to see a cross section of  
19 representatives from local citizens' committee involved  
20 in the production of the manual itself, first of all.  
21 The subject matter will be talking probably in Panel 3,  
22 but also during its application to the process, just as  
23 all the other implementation manuals are available, the  
24 local citizens' committee would be involved in their  
25 application at the management level throughout the

1 process, and the manual will be available for.  
2 individuals to consult during information centres.

3 MR. FREIDIN: Thank you.

4 MADAM CHAIR: Thank you, Mr. Kennedy. A  
5 quarter after one. See you then.

6 ---Luncheon recess at 11:45 a.m.

7 ---On resuming at 1:30 p.m.

8 MS. BLASTORAH: We have another set of  
9 overheads to mark, Madam Chair, before the beginning of  
10 this afternoon's presentation.

11 I put a copy for each of the panel  
12 members on the table there. I believe I have the  
13 correct exhibit number, which is 2265, and I  
14 distributed this already to the parties.

15 This is a package of 16 overheads, and  
16 the title page of that package is Clearcut  
17 Silvicultural System: Silvicultural Costs &  
18 Effectiveness for Wood Supply.

19 ---EXHIBIT NO. 2265: Document entitled Clearcut  
20 Silvicultural System: Silvicultural  
Costs & Effectiveness for Wood Supply.

21 MR. FREIDIN: Madam Chair, this evidence  
22 for this overhead is going to be presented by Mr. Waito  
23 and Mr. Callaghan. It will become apparent during  
24 their evidence what their respective roles were in  
25 relation to both the report of the committee, Exhibit

1 2226, and more particularly the role Mr. Callaghan  
2 played, in a separate exercise subsequent to the  
3 preparation to Exhibit 2226.

4 DIRECT EXAMINATION BY MR. FREIDIN:

5 Q. So perhaps, Mr. Waito, seeing as it  
6 starts with that particular document, you should start  
7 off.

8 MR. WAITO: A. I would like to review  
9 for the Board some of the important considerations that  
10 were made by the committee in order to complete this  
11 analysis and provide an answer to the Board. I would  
12 also like to spend a bit of time reviewing the results  
13 of the analysis.

14 The report is fairly large in size. Just  
15 a comment about that. Because of the interest in the  
16 results and potential for questions about the  
17 assumptions that were made and the methodology that was  
18 used, the committee attempted to thoroughly document  
19 these assumptions and methodology. And in fact, it is  
20 that documentation that accounts for, in large part,  
21 the size or thickness of that document. It would also  
22 give anyone who had the time to read it, the  
23 opportunity to appreciate the complexities of the task  
24 that we are faced with, would allow people to conduct  
25 their own analysis if they wished, for comparison

1 purposes.

2 I am also here to give the Board an  
3 opportunity to ask any questions that they might have  
4 about the report itself.

5 The report is broken down into basically  
6 two main parts; part one and part two. Part 1 is  
7 broken into part A and B. Part 1 costing dealt with  
8 the costing of the two silvicultural alternatives.

9 We went through a series of major steps  
10 in determining the silvicultural costs. First for the  
11 Forests for Tomorrow alternative -- the first step was  
12 to develop the cost for individual silvicultural  
13 practices. By individual silvicultural practices, I am  
14 referring to site preparation, appending, strip  
15 cutting, planting.

16 For that we used the most recent OMNR  
17 financial information and on page 51 of the report at  
18 table A-3, there is a range of cost displayed. We also  
19 used information contained in published reports. This  
20 included some of the evidence that was submitted by  
21 Forests for Tomorrow in one of their panels, and we  
22 used information provided by committee members.

23 Another important step was to interpret  
24 the FFT terms and conditions; the silvicultural terms  
25 and conditions. To develop field prescriptions or



1 silvicultural regimes. These were developed by working  
2 group.

3 We had some -- much discussions about how  
4 to interpret terms and conditions and ended up with a  
5 series of interpretations ranging from what one might  
6 call a rigorous interpretation or a letter of the law  
7 interpretation, and one that might be characterized as  
8 a less rigorous interpretation where the FFT terms and  
9 conditions were used more as a guide.

10 We were then faced with developing costs  
11 of the implementation of the various silvicultural  
12 regimes, and a regime is a combination of silvicultural  
13 practices.

14 We also had to select an area in the  
15 boreal forest to apply the silvicultural regimes to.  
16 In this case we used an area of 142,154 hectares, which  
17 is made up of five major boreal forests working groups  
18 in the three northern regions that were actually  
19 harvested in 1988/'89.

20 The next slide, or next page in the  
21 handout, I would just like to use that to maybe explain  
22 in a little more detail where some of the costs were  
23 incurred and so on.

24 This particular slide is for the spruce  
25 working group and represents an area of a little over

1       63,000 hectares, which is part of that 142,000 total.

2               Down the left-hand side you will note we  
3       have what we call silvicultural activities, and we have  
4       such things as extra harvest costs for roads and  
5       layout. We might think of strip cutting costs, extra  
6       harvest costs for poplar removal that was specified.  
7       The cost of site preparation on a per hectare basis,  
8       planting, seeding, manual release, real tending and so  
9       on.

10              And across the top we have got, for the  
11       spruce working group, we came up with, in this case,  
12       four different silvicultural regimes; the first 3 are  
13       natural regeneration regimes and it is simply dividing  
14       the 63,000 hectares into a portion of area that was  
15       going to be strip cut using a three coupe method versus  
16       the two coupe method. Regime D, at the extreme  
17       right-hand side, is a combination of strip cutting and  
18       planting.

19              Then in the body of the table you can see  
20       we assigned different costs to each of the  
21       silvicultural activities, depending on how we  
22       interpreted the requirement to do site preparation or  
23       to do tending, and this combination really only  
24       represents four possibilities. There are many more.

25              So then at the bottom, where we come up

1 with total costs, we get a range of costs, for  
2 instance, for the spruce working group, ranging  
3 anywhere from \$57 million annually for Regime B, up to  
4 \$95 million annually for Regime D. We use the same  
5 format for the other four working groups that we  
6 developed costs for.

7 This format enabled us to describe a  
8 range of costs for the Board and went along with the  
9 previous table I was referring to, where we display a  
10 range, what the range in costs might be for the  
11 individual silvicultural activities.

12 And based on the assumptions that the  
13 committee made, and the interpretations and so on, the  
14 Forests for Tomorrow alternatives, the costs range from  
15 \$78.2 million to \$163.6 million annually.

16 We also had to develop costs for the  
17 present practice alternative. That term we used to  
18 describe the way things are presently done.

19 For this task we use the 1990/'91  
20 silvicultural records to determine actual silvicultural  
21 regimes that were used to be implemented and used in  
22 this report. We use the same unit costs as were used  
23 for the FFT alternative and based on the assumptions  
24 and the calculations of the present practice cost, to  
25 regenerate the same area, the 142,000 hectares, was

1       \$90.6 million. These are in '91 dollars.

2                   Part 1(b), was intended to try and answer  
3       the question of road construction maintenance costs,  
4       and the committee found it was very difficult to come  
5       to any kind of consensus on this particular topic.

6                   We were faced with the question of what  
7       is additional road construction, what is additional  
8       road construction requirement? For example, how many  
9       more kilometres would have to be built. The question  
10      was really, is it additional as in any -- regardless of  
11      which system were to be used, eventually you would have  
12      to construct all of the road.

13                  There was much discussion about what  
14      might affect the amount of road to be constructed; size  
15      of clearcuts or patches we felt might have an effect.  
16      The return time to cut adjacent uncut forests would  
17      have an effect.

18                  The harvest level or the volume to be  
19      maintained might have an effect on how much additional  
20      road would have to be harvested. And by that, I mean  
21      we might -- depending on the road construction level,  
22      it is conceivable that would you reach the end of the  
23      road before you were able to supply enough wood to the  
24      mill.

25                  The Nelson & Finn article of which there



1 is a copy in the report, provided some insight into the  
2 relationship between cut block size, return time,  
3 harvest level and the timing and level of road  
4 construction required, and it was used in our  
5 deliberations.

6 In our report, our analysis shows that  
7 roads would have to be constructed earlier under the  
8 FFT alternative and therefore costs would be incurred  
9 earlier. That maintenance and reconstruction costs  
10 would probably be higher over the long-term, mainly  
11 because there would be more road to maintain for a  
12 longer period of time.

13 But in any event, we would end up with --  
14 probably end up with a similar level of access for  
15 either alternative, and it was a question really of  
16 timing as to when the road would be constructed.

17 Q. Mr. Waito, the number that you  
18 presented earlier, the 9.6 and the 163.6 million versus  
19 78.2 million, does that include anything for road  
20 costs?

21 A. No, they do not.

22 Q. Okay. Thank you.

23 A. Part two of the report is a wood  
24 supply analysis and we felt as a committee that it was  
25 important to examine the possible results of using two

1 different silvicultural systems; the two being the FFT  
2 alternative and the present practice alternative.

3 To provide a bit of a range, the  
4 committee chose two possible versions of the FFT  
5 alternative compared to the present practice  
6 alternative.

7 What we call FFT scenario number one,  
8 reflects a fairly rigorous interpretation of the ground  
9 rules and could be characterized as an almost  
10 completely natural regeneration silvicultural  
11 alternative.

12 FFT scenario number two reflects a less  
13 rigorous interpretation, and is a combination of  
14 natural and artificial regeneration silvicultural  
15 regimes. The present practice alternative is a  
16 combination of natural and artificial silvicultural  
17 regimes.

18 To assist us in our wood supply analysis,  
19 a computer simulation model was used and the model was  
20 called FORMAN. It is a model which was familiar to all  
21 committee members, to some degree, but which like all  
22 models requires many assumptions to be made.

23 The results of the modelling exercise, as  
24 reported by the committee in the report, was based on  
25 an analysis only of one management unit. It was not

1 for the entire boreal forest.

2 The committee originally planned to look  
3 at three management units selected from across the  
4 boreal forest; initially one from the northwest region  
5 which would have probably a preponderance of Jack Pine  
6 working group, one from the north central region, which  
7 is the one we actually used, and of course one from the  
8 northern region, which would have a preponderance of  
9 Black Spruce working group.

10 We wanted to initially look at three  
11 different management units to see how the wood supply  
12 might vary based on the site conditions and forest  
13 conditions that existed. We did not have time to do  
14 that. We do have one here.

15 The results that we determined, was that  
16 for the Forests for Tomorrow scenario number one, which  
17 was natural regeneration, and I will point out that  
18 there was no constraint on funding to carry out, when  
19 the analysis was carried out, for the FFT scenario  
20 number one.

21 The modelling determined that FFT  
22 scenario number one produced the lowest level of  
23 conifer sustained even flow, and this level was  
24 approximately 700,000 cubic metres per year over the  
25 first hundred years. The model was only run for a

1        hundred years.

2                    But based on the cost assumptions that  
3        were made, it would cost up to two times more to tree  
4        silviculturally and that over the hundred year range  
5        the cost on average was about 20 per cent more than in  
6        the present practice.

7                    Q.   Mr. Waito, can you just expand on  
8        what you mean when you say that the FFT scenario one,  
9        and I also note number two, was calculated with no  
10       constraint on funds.   What does that mean?

11                   A.   The committee, I guess, took the  
12       position that if the Board had opted for the terms and  
13       conditions that have been put forth by Forests for  
14       Tomorrow, they become -- the law, I guess, and managers  
15       would be expected to carry out those silvicultural  
16       terms, conditions or practice in that fashion, and that  
17       as a result we felt money would have to be made  
18       available to do the work.   It was on that basis that we  
19       did not limit the funding to FFT alternatives in this  
20       go around.

21                   Q.   Thank you.

22                   A.   FFT scenario number two, which is a  
23       combination of natural regeneration plus artificial  
24       regeneration produced the highest level, sustained even  
25       flow was approximately 823,000 cubic metres per year



1 over the first hundred years. However, this could cost  
2 up to three times more in any five year period to tree  
3 silviculturally, and over the hundred year run it cost  
4 on average, about 110 per cent more than the present  
5 practice.

6 The present practice scenario, number  
7 three, was a combination of natural regeneration plus  
8 artificial regeneration. Funds in this case were  
9 constrained to the 1990/'91 funding level, as we are  
10 trying to compare to what was actually being done, and  
11 the modelling here showed that we achieved a mid-range  
12 of sustained even flow somewhere in between scenario  
13 number one and number two, around 774,000 cubic metres  
14 per year.

15 For me, the analysis just simply  
16 demonstrates that you can produce different results if  
17 you use different silvicultural systems; i.e., conifer  
18 wood supply can vary, and that the cost can vary and  
19 they can be significant, no matter what system is used.

20 Now, as I pointed out, in this analysis  
21 of cost and results, it was not possible to directly  
22 compare the sustained even flows that were determined  
23 by the wood supply analysis. This was because funding  
24 for the FFT alternative was not limited, while the  
25 present practice alternative was based on the '91/'92

1 level of funding.

2 This analysis showed that relatively  
3 similar even flows were achieved for each of the three  
4 scenarios, but at a substantially higher cost for the  
5 two FFT scenarios.

6 The committee did not have time to do an  
7 analysis using equal funding levels.

8 In my opinion, I would expect that lower  
9 funding levels for FFT alternatives would result in  
10 lower conifer regeneration success levels, and  
11 therefore a lower conifer even flow level.

12 I say that because if less money is spent  
13 on site preparation or on tending the silvicultural  
14 activities themselves, then it is my feeling that the  
15 regeneration success levels that are expected to be  
16 achieved won't be achieved. We will not get as high a  
17 stocking if it is necessary to do that silvicultural  
18 work.

19 Q. When you say that, Mr. Waito, are you  
20 speaking about code of volume or are you talking about  
21 conifer volume?

22 A. I am talking about conifer volume in  
23 this case.

24 Q. Thank you.

25 A. And that is not to say that the use

1 of natural regeneration techniques is always  
2 inappropriate. I am a firm believer that natural  
3 regeneration techniques, the use of them, is  
4 appropriate on certain sites, under certain conditions,  
5 and I think when used properly, at the right time and  
6 in the right place, it is possible to achieve both FFT  
7 and MNR's standards of renewal, but I believe that the  
8 person who is most qualified to make the prescription,  
9 make the choice as to which way to go, is the unit  
10 forester.

11 As I said earlier, we did not have time  
12 in the committee that I was involved with, to do an  
13 analysis using equal funding levels. However, Brian  
14 Callaghan, who is with us today, has conducted a wood  
15 supply analysis at the provincial level, which makes  
16 such a comparison and I believe Brian follows next.

17 Q. Before Mr. Callaghan does that, you  
18 made a comment very close to the beginning of your  
19 evidence, Mr. Waito, that there were a series of  
20 interpretations of FFT's terms and conditions.

21 Could you explain why the committee found  
22 it necessary to in fact describe a series of  
23 interpretations?

24 A. Well, we had four foresters on the  
25 committee and we all had different ideas as to what

1 would work and what wouldn't work.

2 We found the FFT terms and conditions  
3 quite often did not cover all of the situations that we  
4 were faced with making a prescription for; for example,  
5 the Balsam Fir working group was not specifically  
6 referred to in the terms and conditions, yet we had to  
7 develop silvicultural prescriptions for the Balsam Fir  
8 working group. It was a tough job.

9 We had some disagreement, and I use the  
10 Spruce working group as an example, some disagreement  
11 over how much site preparation might be required in the  
12 Black Spruce working group, and some members on the  
13 committee felt that less area would have to be site  
14 prepared to achieve the objectives than not, and so we  
15 said, well, there's obviously a difference of opinion  
16 here, let's develop a range of prescriptions. The  
17 range could have been much greater than what it was  
18 there.

19 It was very difficult to, in many cases,  
20 understand exactly what the terms and conditions were  
21 saying, what they meant, and what that meant in terms  
22 of an actual silvicultural prescription that a unit  
23 forester might apply in the field. So we came up with  
24 a range, because the Board had asked for a range of  
25 costs. So we came up with a range.



1 Q. Thank you, Mr. Waito.

2 Mr. Callaghan, I guess we could switch  
3 over to you.

4 MR. MARTEL: We have heard in this  
5 hearing that you get better regeneration with  
6 artificial regeneration. You get a better volume of  
7 wood in a shorter period of time. I think that is  
8 fair. And we haven't gone the full gamut over the  
9 lifetime of a location, what has happened in terms of  
10 natural regeneration, which is what, 90 to a hundred  
11 years.

12 How do you make a comparison, then, of  
13 which is more successful, having those two ideas put  
14 before you.

15 MR. WAITO: Well, I will start off by  
16 saying that I think it is possible to get, under  
17 managed conditions, greater yield in volume,  
18 particularly if you take advantage of thinnings and so  
19 on so that you capture that volume and you actually use  
20 it. I do not believe in all cases, though, that you  
21 are going to actually get more volume by managing  
22 something by planting or seeding.

23 To me what is most important is, if it is  
24 conifer that you want, on certain sites it is extremely  
25 difficult to get good conifer regeneration by just

1       relying on natural regeneration.

2                   So simply just to get conifer  
3       regeneration back, even if it produced at the same  
4       volume that you originally harvest it, it may be  
5       necessary to do artificial -- utilize artificial  
6       regeneration techniques just to get the conifer back.

7                   And again, that doesn't mean that you are  
8       going to get more volume, but you are going to get at  
9       least get the conifer there which was a focus of the  
10      whole wood supply analysis.

11                   In terms of total volume growing on the  
12      site, you may in fact end up with more volume if you  
13      let it regenerate naturally, but it is going to be made  
14      up of other unwanted species.

15                   So to me the most important thing is what  
16      are the objectives that you are trying achieve on the  
17      sites that you are managing. If your objective is  
18      simply to get volume of any description, then cutting  
19      and walking away may be acceptable. But if, on other  
20      the other hand, your objective is to get high quality  
21      conifer regeneration, be it for timber purposes, be it  
22      for wildlife purposes, be it for whatever your  
23      objective is, you may have to use all the tools that  
24      you have available.

25                   In terms of how do you guess or how do

1 you know or how can you project how much volume you are  
2 going to have, because we haven't run the gamut, it is  
3 a projection.

4 There is evidence around, there is  
5 literature that can be used to help foresters develop  
6 yield curves because these models run on the basis of  
7 yield curves, and before you can do the modelling you  
8 have to make a prediction as to what kind of volume,  
9 what your forest is going to look like, and right now  
10 we had to rely on the knowledge of the unit forester,  
11 what that person has seen develop, based on the time  
12 they spent on the unit.

13 As I said, there are publications  
14 available that can be used to help develop those yield  
15 curves.

16 As you point out, we are in the early  
17 stages of it and it is all a prediction. But there is  
18 some science behind it and as a result of that concern  
19 that foresters have about what we are actually going to  
20 get out there, that our growth and yield program is  
21 being implemented this year in a fairly big way through  
22 our sustainable forestry initiative to try and get some  
23 of those answers. That is part of the guess work that  
24 we are involved in now.

25 MR. CALLAGHAN: I was given the task of

1 doing some further analysis with this costing exercise.

2 What the intention was, was to in a more  
3 strategic sense to do what was done in Part B over the  
4 entire boreal forest and also to put in place -- put  
5 all of the alternatives, the two Forests For Tomorrow  
6 alternatives and the MNR alternative on the same  
7 financial footing.

8 In the two alternatives presented in the  
9 report, if you distribute them over the entire boreal  
10 forest, Forests For Tomorrow's initial -- the rigorous  
11 interpretation is funded at a level of about \$102  
12 million, while the less rigorous one is funded at a  
13 level of \$155 million. What I did was bring those back  
14 to the \$9.6 million that MNR spent on silviculture on  
15 the three boreal regions in '90/'91.

16 So what did I do. The first thing I had  
17 to do was classify all of the treatments and the their  
18 silvicultural prescriptions as listed in the report  
19 into three intensity regimes.

20 In normal course of business we refer to  
21 our silvicultural intensities as either intensive basic  
22 or extensive.

23 So the first one -- I took intensive as  
24 we normally take it as being where we spend our most  
25 money and it's generally our planting prescriptions are



1 considered to be intensive.

2 The basic regime is the less intensive  
3 silviculture that we practice; seeding, the harvest and  
4 renewal options, careful logging and assisted natural  
5 renewal.

6 Extensive management, in the course of  
7 this analysis, are those areas which were left  
8 untreated. Currently MNR treats, out of 147,000  
9 hectares looked at here, we were treating around  
10 120,000 hectares. The remainder was being left  
11 untreated.

12 So once I classified all the various  
13 prescriptions, I then had to cap the funding. It was  
14 simple mathematics by just taking the ratio of the  
15 funding level that Forests For Tomorrow's alternatives  
16 were being given and comparing that to the funding  
17 level of MNR, 102 million is approximately 10 per cent  
18 higher, therefore, I had to reduce their funded  
19 silviculture by 10 per cent and that area which was  
20 unfunded went into the extensive management or  
21 untreated regime.

22 The next step was to apply yield data to  
23 each of the treatments based upon its intensity, and  
24 what I did was I took yield data that we have and I  
25 picked a moment in time. This may help you for the

1 comparison between the two. I picked the moment in  
2 time, and that was 60 years from now. So 60 years  
3 after we establish or we do our renewal treatment, what  
4 will the forest look like, and that is what I was  
5 trying to show, and we define that in terms of softwood  
6 and hardwood growing stock that would be present on  
7 that 142,000 hectares.

8 Table one on page 13 gives you the  
9 numbers of the results. So for each of the three  
10 regimes, MNRs and the two Forests For Tomorrow  
11 alternatives, we identify by intensity regime the area  
12 treated, the total cost for treating that area, the  
13 total volume generated 60 years from now, understanding  
14 that that 60 years -- this is not all harvestable  
15 volume. Some of the volumes, for example, on basic  
16 intensive and extensive treatments will not be ready  
17 for harvest until 80 or 70 or a hundred years from now.  
18 So this is just what growing stock would be on that  
19 142,000 hectares in the future. And as well, we have  
20 the volume of hardwood and softwood within the total  
21 volume.

22 So if you look at the present practice,  
23 MNR is currently planting or carrying out intensive  
24 management on 61,000 hectares out of the 142; 59,000 is  
25 treated in a basic fashion and 21,000 hectares is going

1 untreated or being -- in the report it was called  
2 unreported natural renewal.

3 When we scale the Forests For Tomorrow  
4 alternatives back, originally they were treating the  
5 entire 142,000 hectares. But as you reduce the  
6 funding, more hectares leave, are not being funded for  
7 renewal, therefore, more hectares go into extensive  
8 management.

9 So in the rigorous interpretation, where  
10 the entire active renewal program is in basic  
11 management, 16,000 hectares leave and become untreated,  
12 and in the less rigorous interpretation, which was  
13 funded for \$155 million, when we brought it down to  
14 90.6, almost 59,000 hectares were left untreated.

15 You will have to flip to page 15. My  
16 slides are out of order in the handout.

17 This overhead shows the breakdown  
18 schematically of the present practice of MNR in the  
19 boreal forest compared to the rigorous interpretation  
20 of Forests For Tomorrow's alternative and the less  
21 rigorous interpretation. So that is just a snapshot of  
22 how those hectares would be treated, given that they  
23 were all funded at \$90.6 million.

24 The next step - if we can go to the next  
25 slide - is to look at the volume that would be out

1       there 60 years from now, and that is back at page 14.

2               What I am showing with this slide, is the  
3       proportion of hardwood and softwood volume within the  
4       142,000 hectares which are treated 60 years from now.

5               I also have a fourth bar on the overhead  
6       which shows the FRI 86, which is the amount of total  
7       growing stock in the three northern regions as reported  
8       in the Forest Resources of Ontario 1986, which is an  
9       exhibit that has already been put in the record. And  
10      comparing that to what would happen 60 years from now  
11      on that 142,000 hectares, so that MNR -- the current  
12      practice of MNR in the boreal forest will result in a  
13      forest of similar composition to that that was found in  
14      the inventory in 1986.

15              While the Forests For Tomorrow  
16      alternatives which showed lesser amounts of conifer  
17      volume of the stump.

18              MR. FREIDIN: Q. Mr. Callaghan, does any  
19      of the material that you have presented here, indicate  
20      in percentages, the differences in terms of conifer  
21      harvest that one can expect if you compare MNR's  
22      present practice to FFT one and two?

23              MR. CALLAGHAN: A. Table 1 on page 13,  
24      doesn't show you conifer harvest. It shows you conifer  
25      content in terms of growing stock available on those



1 sites.

2 Present practice will generally give you  
3 71 per cent softwood to 29 per cent hardwood. I  
4 believe Forest Resources 86 was closer to 73 per cent,  
5 27 per cent. So that is fairly close.

6 The rigorous interpretation of Forests  
7 For Tomorrow utilizing mostly basic silviculture would  
8 give us a 54/46 split in terms of softwood and  
9 hardwood, while the less rigorous interpretation, which  
10 utilizes more planting, would have about a 59 per cent  
11 softwood content to 41 per cent hardwood content.

12 So the conclusions that can be drawn from  
13 this -- first of all, as funding is constrained, and in  
14 general parlance that means reduced, the area of  
15 extensive renewal will increase because we will not  
16 have money to treat these areas, so they will be left  
17 untreated.

18 Also from table 1, the total volume  
19 difference between the scenarios is really at 10 per  
20 cent of each other. So we are not saying that there's  
21 going to be a great increase in volume growth on those  
22 sites. They all come out within 10 per cent of each  
23 other. But the volume composition between the  
24 scenarios differs significantly as to the softwood and  
25 hardwood composition.

1                   If we compare that composition of the  
2                   three alternatives to the inventory, MNR's current  
3                   renewal program is predicted to produce a forest which  
4                   more closely approximates the composition of the  
5                   initial forest than the two Forests For Tomorrow  
6                   alternatives.

7                   MR. FREIDIN: That completes the evidence  
8                   that we intend to lead on this particular subject  
9                   matter, Madam Chair, and the next area -- we are  
10                  actually going to move into the second area that Mr.  
11                  McNicol described, and that is monitoring and  
12                  reporting.

13                  The subject matter that we would like to  
14                  deal with is the description, basically an updating of  
15                  the effectiveness monitoring program in relation to  
16                  both fisheries and moose.

17                  As you are aware, both those programs are  
18                  being conducted at the Centre for Northern Forest  
19                  Ecosystem Research and Dr. Abraham, I believe, is the  
20                  head of that particular group and we thought the most  
21                  effective way to begin the discussion of those two  
22                  monitoring programs was to have Dr. Abraham describe  
23                  the work of that particular research institute. I  
24                  understand that is also a matter that the Board wanted  
25                  to have the witness panel expand on a little bit as

1 well.

2 I think we have some overheads to mark as  
3 exhibits, perhaps before we start, and it would be  
4 Exhibit 2266. There are 29 pages to those overheads.  
5 It is entitled Effects and Effectiveness Monitoring  
6 (Provincial Level) Centre for Northern Forest Ecosystem  
7 Research and Long-Term Studies. These are the  
8 overheads by Dr. Abraham and Dr. Steedman's overheads  
9 are in there here as well.

10 DR. ABRAHAM: Madam Chair, Mr. Martel, I  
11 have two overheads simply to provide further  
12 information based on your request to hear more about  
13 what the Centre for Northern Forest Ecosystem Research  
14 is all about.

15 The centre was proposed prior to the  
16 environmental assessment hearings, and in the initial  
17 stages of the environmental assessment preparations.  
18 It was proposed at that time that the Northern Forest  
19 Biology Centre, at a northern university, Lakehead  
20 University, with two principle aims of the centre would  
21 be to enhance the science of forest management and to  
22 enhance the forestry research capabilities at the  
23 northern university, and also to integrate forestry and  
24 wildlife, the two terrestrial components of research in  
25 traditional forestry exercises.

1                   That original purpose was modified  
2           somewhat in 1989 and '90, as a result of, among other  
3           things, the environmental assessment and the emergence  
4           of monitoring programs that came out of the  
5           environmental assessment. Also because of changes  
6           administratively in the Ministry of Natural Resources  
7           in terms of consolidation of the forest resources  
8           program and the northern relocation.

9                   The current mandate then, after that  
10          reanalysis of the purpose for the centre, is much  
11          broader than the original intent which was more  
12          narrowly focused on some traditional forestry research  
13          areas in terms silviculture, seedling, physiology,  
14          regeneration and vegetation development, post harvest.

15                  The current mandate involves a focus on  
16          multi disciplinary research and the disciplines will be  
17          outlined a couple of points down.

18                  I am emphasizing long-term studies with  
19          appropriate tax on the short-term problems and to  
20          provide the basic framework is to provide a sound  
21          ecological basis for forest ecosystem management.

22                  The Board had a question about the number  
23          of people involved at the centre. We currently have 15  
24          permanent staff, 6 contractor part-time staff and a  
25          variable number of seasonal staff and students. Among



1 those permanent staff we have scientists, technicians,  
2 biologists, administrative support people.

3 The research includes, and I have  
4 highlighted here, indicated the major research programs  
5 which you will be hearing about more in a few minutes.

6 The effect and effectiveness monitoring  
7 programs for fisheries, for moose and for tourism  
8 guidelines were all centered at Lakehead University, in  
9 MNRs centre.

10 In addition, there is research of the  
11 effects of full tree harvesting, on weather dynamics,  
12 on predictive modelling of heritage resources, which is  
13 being conducted by a Lakehead University group  
14 sponsored or funded in part by the Minister of Natural  
15 Resources, and in the future we are expecting that the  
16 programs for effectiveness monitoring of other wildlife  
17 programs and research on population monitoring would  
18 also be centered at Lakehead.

19 The Board also had a question about what  
20 the interaction with the universities has been, and  
21 here it is principally with Lakehead University,  
22 because of the proximity. It was strategically placed  
23 at Lakehead in order to increase the research and  
24 academic interaction between the Ministry of Natural  
25 Resources and the university community.

1                   So far we have participated in joint  
2           research proposal development through these well  
3           publicized programs; the Model Forest Program, Northern  
4           Ontario Development Agreement and the Green Plan.

5                   We have a weekly ecology study group  
6           which involves members of the biology department,  
7           geography, forestry and sometimes from sociology and  
8           anthropology, as well as the MNR staff who reside at  
9           the centre.

10                   As you heard earlier, Dr. Steedman, the  
11           rest of scientists and myself, are adjunct faculty in  
12           the departments of biology and forestry which allows us  
13           to participate in the supervision of graduate students  
14           and graduate student research, and to participate on  
15           committees in those academic departments.

16                   We are currently involved with seven  
17           graduate student committees, either as co-supervisors  
18           or partners on the supervisory committees.

19                   We are also providing research funds for  
20           studies related to the effectiveness monitoring  
21           programs for currently I think it is three graduate  
22           students, and involved with research through MNR and  
23           other areas of timber management.

24                   We also employ a large number of students  
25           from the university community in various co-operative

1 work programs throughout the year and particularly  
2 during the summer, and we participate in some  
3 educational activities; providing lectures for  
4 particular courses on invitation and seminars as well  
5 for graduate students.

6 Finally, the anthropology department has  
7 a unit, as I said partially funded by MNR, which  
8 resides in the centre. There are also graduate  
9 students from the various departments residing in the  
10 centre, and this increases the activity, the  
11 interaction and feedback, between MNR and the academic  
12 community.

13 I have not listed them here, but there  
14 are interactions of other universities, both in Ontario  
15 and out, McGill University, Guelph, Waterloo and  
16 Carleton are some of the universities which there is  
17 some co-operative work being undertaken.

18 Those are all the prepared statements I  
19 have on the centre. Any questions?

20 MR. FREIDIN: Q. Dr. Steedman, perhaps  
21 you can pick up your presentation on the program on the  
22 moose habitat management.

23 DR. STEEDMAN: A. Madam Chair, Mr.  
24 Martel, I will be speaking about the aquatic effects,  
25 in effectiveness research program. We have prepared

1 eight overheads to tell you about this. More detail  
2 can be had behind tab 6.

3 Q. It is found on page 13.

4 A. More details can be seen behind tab 6  
5 starting at page 9 where it refers to the aquatic  
6 effects and effectiveness research program.

7 I will briefly go over the objectives for  
8 this research program. I will outline the three  
9 complimentary research approaches that we will be using  
10 to address the diverse information need associated with  
11 this research, and at the end I will briefly address  
12 the two issues; the first one is a comparison of MNR's  
13 provincial research program and I will compare that to  
14 the local effects that have been proposed by OFAH most  
15 strongly, and the last issue I will touch briefly on,  
16 cumulative effects of timber management on the aquatic  
17 environment.

18 As an up-date the study objectives of the  
19 research program are unchanged from those described in  
20 MNR's Panel 16, and those are, to measure the  
21 effectiveness of OMNR's timber management guidelines  
22 for protection of fish habitat, so that remains a key  
23 objective.

24 Another key objective remains to measure  
25 and predict effects of timber management on aquatic



1 ecosystems in the area of the undertaking.

2 Although those two objectives have  
3 remained, we have modified slightly the research  
4 approach to achieve them.

5 Panel 16 evidence emphasized a watershed  
6 scale of experimental approach. I would like to  
7 outline that approach and two others that we feel are  
8 necessary to achieve the objectives that I outlined.  
9 In the next three overheads, I will explain these in  
10 more detail. I will just briefly identify them at this  
11 point.

12 The first is a broad scale comparative  
13 survey. This has also been called a synoptic survey in  
14 previous documents and by other researchers. The  
15 second approach remains the watershed scale  
16 experimental case study where a small number of aquatic  
17 ecosystems will be subjected to commercial style timber  
18 harvest operations and monitored intensely, and if I  
19 could point out at this time, that the word watershed  
20 has a number of synonyms that may have come up in  
21 hearings and I will just list those for your  
22 information.

23 Synonyms of watershed can include the  
24 term basin, they can include the term drainage basin or  
25 the term catchment can all be used interchangeably.

1                   The third component of this research is a  
2           small scale series of studies of sediment in nutrient  
3           transport designed specifically to address buffer strip  
4           with issues, and I will provide more detail on all  
5           three of those in a moment.

6                   I would like to emphasize that the  
7           conceptual outline at this point, and in fact to a  
8           certain level of operational detail, these approaches  
9           have been reviewed and refined by an international  
10          panel of technical and scientific experts.

11                   The main mechanism for that was a three  
12          day experimental design workshop at the Aquatic Centre  
13          where we invite our technical network composed of both  
14          Canadian and U.S. scientists and resource managers to  
15          discuss details of experimental design as I am  
16          describing to you.

17                   Q.   Are any of those experts involved in  
18          a continuing basis with the work being done at the  
19          centre?

20                   A.   Yes, we continue to consult  
21          extensively with this group of people. We work with  
22          them both academically and scientifically in many ways.  
23          It is very much an ongoing process.

24                   So we have designed this research to  
25          provide a set of quantitative relationships that

1 predict the response of aquatic ecosystems to timber  
2 management activities in the area of the undertaking,  
3 and we will produce those quantitative decision tools  
4 to provide information in four areas primarily, and  
5 these include water quality or water chemistry,  
6 hydrology, which refers mainly to the amount of water  
7 running off a catchment. This could include stream  
8 flows and lake levels. It includes aquatic habitat or  
9 the physical environment that fish and other aquatic  
10 organisms live in. This could include sediment  
11 quality, the thermal structure of lakes, bank stability  
12 in streams, et cetera. And finally, and certainly not  
13 least, the abundance and nature of aquatic biota  
14 living in these ecosystems. A key target organism here  
15 are fish, but it also includes phytoplankton,  
16 zooplankton in the included list.

17 An important consequence of the three  
18 complimentary approaches that we are using, is that we  
19 don't have to wait 10 years to get some kind of useful  
20 results.

21 A couple of the approaches that I will  
22 mention in just a moment, should produce useful payoffs  
23 in a relatively short time, such as three to five  
24 years. So we hope to have something to say about the  
25 efficiency of the guidelines and effects of timber

1 management, for example, by the five year review period  
2 in this undertaking.

3 And now I will briefly outline in a  
4 little more detail about the three southern approaches.

5 The first one is the broad scale  
6 comparative or synoptic survey. This may sound  
7 somewhat like the local effects monitoring approach  
8 that was proposed by OFAH. It shares certain important  
9 similarities, but there are significant differences in  
10 the way the activity will actually be undertaken.

11 This program will provide measurement of  
12 selected biotic or biological and physical indicators  
13 at a large number, and I have chosen for discussion  
14 today, we think we can do approximately 50 to 100  
15 stream and lake locations across the area of the  
16 undertaking. So the key aspect of this activity is  
17 that it will do relatively short intensive looks at a  
18 wide range of aquatic ecosystems and this could include  
19 sites from the rocky shield of Northwestern Ontario,  
20 sites along the north shore of Lake Superior and sites,  
21 for example, in clay belt. So the key aspect here is  
22 to be in a comparative understanding of the response of  
23 aquatic ecosystems to timber management.

24 The sampling locations will be chosen to  
25 compare and contrast a range of timber management



1 activities. The key of variation here would include  
2 timber management intensity and extent above the  
3 monitoring site, and also the time since the activity  
4 was undertaken. So we can both compare the effects of  
5 different types of timber management and the recovery  
6 rate after timber management.

7 This is one of the tasks that should  
8 provide useful results in a relatively small number of  
9 years and it will facilitate exploratory analysis of  
10 key spatial and temporal trends in aquatic ecosystem  
11 response to timber management.

12 The key variables that we are focusing on  
13 are temperature, sediment, habitat and certain biota.  
14 At this time we are focusing on fish.

15 The 1992 field season is focusing  
16 primarily on the development of testing sampling  
17 protocols and pilot scale data collection from  
18 brooktrout streams on the north shore of Lake Superior.

19 The next component is the watershed scale  
20 experimental case study, and this is the element that  
21 was emphasized in Panel 16.

22 It will provide intensive monitoring of a  
23 small number of headwater lakes before and after  
24 commercial clearcuttings of watersheds.

25 The experiments will focus on contrast

1 between cut and uncut watersheds to increase the  
2 likelihood of its protectable response.

3 I can indicate at this time that the  
4 likely treatments will include one lake where the  
5 watershed will be completely clearcut, one lake where  
6 the watershed will be cut according to the appropriate  
7 timber management guidelines for the protection of  
8 aquatic habitat, fish habitat, excuse me, and at least  
9 one watershed where no land use treatment will be  
10 undertaken.

11 The monitoring will take place for  
12 approximately four years before any land use  
13 experiment, and continue for as many years as we can  
14 undertake. We are planning at this time, approximately  
15 six years after the cut.

16 The monitoring will include water  
17 chemistry, hydrology, phytoplankton, zooplankton, fish  
18 and fish habitat.

19 This work will improve our ability to  
20 identify, measure and predict timber management effects  
21 on stream and lake ecosystems by providing a very  
22 thorough and ongoing monitoring of the response of  
23 these lake systems to land use in the basin.

24 At this time we have undertaken work on  
25 the cold water lakes component of the study. Cold

1 water lakes was used to refer primarily to lake trout  
2 communities, at tab 16.

3 The study area that we were working on is  
4 about 70 kilometres northwest of Atikokan. The project  
5 is modular in that the future analogous projects on  
6 cold water streams, which means primarily brooktrout,  
7 and cool water lakes which would include other fish  
8 associations, particularly walleye, pike and bass, are  
9 in planning stage at this time.

10 The third of the research approaches will  
11 look at small scale studies of sediment and nutrient  
12 transport. It will involve sampling of sources of  
13 eroded material in the area of the undertaking.  
14 Examples would include hill slopes, road networks,  
15 stream crossings. Also ditch drainage areas along the  
16 road.

17 It is intended to estimate distances that  
18 eroded material may be transported over land toward  
19 aquatic environments through ditches, through cutovers,  
20 through buffer strips. And you will note that this is  
21 very similar to the kind of work that was discussed in  
22 connection with the Trimble and Sartz article, which  
23 was one of the primary conceptual underpinnings of our  
24 timber management guidelines; the protection of fish  
25 habitat with respect to buffer strip away.

1                   The studies will examine the fate of  
2     sediment deposited in aquatic environments. We will  
3     look at the transport of nutrients associated with  
4     sediment. In particular it is intended to test the  
5     capability to the area of the undertaking of the work  
6     of Trimble and Sartz and others regarding buffer strip  
7     design.

8                   The key thing here is that it will not  
9     only increase our understanding of the design  
10    parameters required to protect aquatic habitat, but  
11    will give us some information about the reliability and  
12    the confidence that we can have in any design  
13    specification.

14                  Q. Dr. Steedman, are you familiar with  
15    the evidence of Dr. Krochak and the OFAH noted at Panel  
16    No. 5, in which he listed a number of criticisms that  
17    he had of the Trimble and Sartz study?

18                  A. Yes, I am.

19                  Q. And can you advise the extent to  
20    which the work being done at the centre that you are  
21    describing now, will be addressing some or all of those  
22    criticisms?

23                  A. As I recall, at least the main  
24    criticisms referred to the fact that the work of  
25    Trimble and Sartz in the Humber Brook (phoen) study



1 area were quite simple. To me that doesn't mean that  
2 they weren't very useful. They used simple observation  
3 to examine the distance that eroded material was  
4 transported over the forest floor. I think that is  
5 perhaps one of the key things that they should have  
6 done, and I don't have a problem with that. But other  
7 things if they didn't do that were raised as a  
8 criticism by Mr. Krochak included a slightly more  
9 sophisticated monitoring of sediment that was not  
10 deposited on the forest floor, but that perhaps may  
11 have been carried in the suspended form into a water  
12 body and they -- OFAH was concerned that if the study  
13 is not done in direct association with the water body,  
14 this was done below a road network, and in various  
15 manifestations, our research will look at those and  
16 other concerns in what I hope to be a very reliable  
17 quantitative way.

18 We have consulted widely on the sampling  
19 methodology that we will be using for this. It is not  
20 easy. This work hasn't been done and we have to invent  
21 methods to measure it and we have to then quality  
22 control those methods, and that kind of leads into my  
23 last point; that the 1992 field season was primarily  
24 focused on the development and testing of sampling  
25 protocols and will -- and is actually at this time,

1       undertaken pilot scale data collection from pilot scale  
2       data collection of sediment transport from road  
3       networks near the cold water lake study. So we have  
4       two people working on it at this time.

5               Just to recap, those three study  
6       approaches consisted of the broad scale comparative  
7       survey, the case study or experimental watershed work  
8       and the small scale sediment transport work.

9               The three methods are complimentary in  
10      that some provide the best information about the broad  
11      spatial areas, some provide the best information about  
12      the integrated response, aquatic ecosystems to land  
13      use, and the third one provides great detailed  
14      quantitative information on the mechanism and amount of  
15      sediment that may be transported below the various  
16      kinds of land disturbance associated with timber  
17      management.

18              The two issues that I mention are up  
19      right now. The first one is just comparison of  
20      provincial research, as I have presented in the  
21      previous few minutes for aquatic effects, effectiveness  
22      research, and I would like to compare that briefly with  
23      our understanding of OFAH's concept of local effects  
24      monitoring.

25              I confess to having some difficulty in

1 actually pinning that down in an operational sense and  
2 so the comments -- this is OFAH's version. So I will  
3 try to comment at a primarily conceptual level there.

4 There are a couple of important points,  
5 and they relate to the development of predicted  
6 relationships between timber management and fish  
7 habitat and fish habitat quality.

8 First, a complex data must be collected  
9 and analyzed during development of predictive models.  
10 It is a highly specialized task that is best undertaken  
11 in structured co-ordinated research effort.

12 I contrast that to the OFHA approach  
13 which advocated wide-spread data collection by  
14 operational staff in an ongoing manner, and I don't  
15 think I can suggest that that would never achieve the  
16 result that I will be describing here in just a moment,  
17 but that it is a much riskier and much less efficient  
18 way of achieving the high quality information that we  
19 need to develop predictive models and beyond that to  
20 evaluate their reliability.

21 Once useful predictive models have been  
22 developed and validated, have been tested, it is quite  
23 clear that limited and high focused local monitoring of  
24 the model predictions is needed. You have no way of  
25 improving the model or assessing its reliability unless

1     you collect information that tests the predictions of  
2     the model. This is the kind of information that closes  
3     the feedback group in adaptive development of  
4     predictive models.

5             Efficient effective monitoring techniques  
6     to do this feedback can't be specified until relatively  
7     late in the model development process, and that is what  
8     I was referring to earlier. We can send people out to  
9     collect temperature data and suspended sediment data.  
10    For as simple as those measurements are, there are very  
11    complicated aspects to the timing of their collection  
12    and to the way in which they are collected, and it is  
13    much more efficient to do that after you know what you  
14    are doing, after you have some understanding of the  
15    kinds of predictions that you are trying to monitor.

16            Monitoring methods must be modified,  
17    calibrated and tested by researchers for reliable  
18    application in the are of the undertaking, and they  
19    must be standardized among all field practitioners who  
20    provide feedback back for model improvement.

21            And as I have mentioned in the previous  
22    section on the sediment transport work, we are going  
23    out there and after an extensive review of the methods  
24    that have been used to do something as simple as  
25    monitoring sediment transport, we find that there are



1 no standards and we have to virtually start from  
2 scratch to develop reliable monitoring techniques.

3 And it is this kind of work in research  
4 mode, by a provincial level research group, that is  
5 required to do something as simple as sediment  
6 monitoring in a reliable and useful way.

7 So the punch line for this particular  
8 overhead is that we believe MNR's approach, the  
9 development of predictive models, is based on an  
10 effective and implementable mix of intensive  
11 experimental monitoring and broad scale comparative  
12 analysis with good quality control, good data quality  
13 and good expertise in the ability to interpret the  
14 results.

15 Once you have made some progress in that  
16 area, then that may be the best time to disburse the  
17 monitoring activities to the operational level, and at  
18 that point you will get good data that will allow you  
19 to improve the models effectively.

20 MADAM CHAIR: Excuse me, Dr. Steedman.  
21 One of the criticisms by the intervenors, and  
22 particularly the Ontario Federation of Anglers and  
23 Hunters and their coalition partner, NOTO, has been  
24 that MNR attempts to do cadillac research when it is  
25 overkill; it is not necessary. MNR should be looking

1 for the immediate solutions to problems and not  
2 assessing how large the problem is or not trying to  
3 better scientific knowledge for such if it is used as  
4 modelling.

5           Could you just go over your arguments  
6 again, very quickly, why you think MNR's resources are  
7 better devoted to very stringent scientific studies as  
8 opposed to practical, less expensive solutions and  
9 also, I think I would like to hear you address how we  
10 can do this kind of research when we have heard for a  
11 very long time that each situation in the forest is  
12 very different from its neighbour, and that many of  
13 these problems that you are going to look at are  
14 variable, depending on the topography and so forth.

15           DR. STEEDMAN: With regard to your first  
16 point, I certainly didn't mean to convey the fact that  
17 we are not interested in achieving very useful results  
18 to improve management and protection of aquatic  
19 habitat.

20           The main point I think would be the  
21 sequence in which those activities are undertaken, and  
22 it may well end up being much more expensive to have  
23 field personnel collecting a lot of data and then  
24 submitting it to some central location and have someone  
25 make sense of it at that time rather than to spend a

1 year or two developing and testing the methods and  
2 making sure that we have done our homework in terms of  
3 what we do know about, for example, predictive  
4 relationships between timber management and sediment  
5 deposition in the streams, for one example.

6 So there are two aspects to it; one is  
7 that you need to bring together the information of  
8 other jurisdictions and other scientific studies on the  
9 subject. You need to adapt and calibrate the  
10 measurement approaches to, in our case, northern  
11 Ontario, the area of the undertaking, and you need to  
12 get some idea of how reliable or to what extent you can  
13 actually predict a relationship between land use and  
14 aquatic habitat protection or degradation.

15 Once you have done that, you would  
16 distribute some manifestation of the predictive model,  
17 and that has happened already in the aquatic -- the  
18 timber management guidelines for the protection of  
19 aquatic habitat embody most of those things that I have  
20 talked about, embody extensive consultation in  
21 literature review very simple, but that accurately  
22 reflects the state of knowledge in terms of the  
23 connection between land use aquatic habitat protection.

24 So that if the guidelines are out there  
25 and as you have heard they are used in a conservative

1 way, and it is a rather big step to go beyond that and  
2 develop particular relationships that might lead you to  
3 reduce the amount of protection, for example.

4 So the approach being that if you don't  
5 know too much about this you need to adopt a very safe  
6 program. In this case, fairly wide buffer strips and  
7 fairly conservative application of those buffer strips.

8 So the research that we are doing, I  
9 think, will be quite productive and quite cheap  
10 compared to what might happen if a provincial scale,  
11 army of water quality monitoring personnel were  
12 deployed to collect data. And as I said earlier, that  
13 would get you where you are going, but I'm not sure if  
14 that would be an effective way of doing it.

15 MR. FREIDIN: Q. I am just wondering,  
16 before you going on to the second question, Dr.  
17 Steedman, can you expand on or perhaps give an example  
18 of why you say that wide stretch data collection by  
19 field staff through the OFAH/NOTO approach would be  
20 fairly risky? In other words, you are saying -- you  
21 basically indicated you should do this model  
22 development up front before you in fact give it to the  
23 field organization. What is the risky part about  
24 saying, well, we haven't done the model yet, but we  
25 will go out and start collection of data?



1 DR. STEEDMAN: A. It is risky mainly in  
2 that is might not work the way you want it to be  
3 presented.

4 The water quality monitoring world has  
5 many examples where millions and millions of dollars  
6 have been spent collecting water chemistry data from a  
7 monitoring network and it has resided in the computer  
8 tapes for 20 years because no one has been able to  
9 analyze it to answer the questions that people have  
10 been really concerned about, for example, land use  
11 effects to water quality.

12 The data collected on a monthly basis  
13 without regard to storm events and other kinds of  
14 important factors, and despite the fact that you have a  
15 high quality data collection network, the numbers  
16 aren't useful and it is deceptively -- it looks easy,  
17 but it is not that easy to get number that get us where  
18 we want to go, which is some kind of useful, probably  
19 simple, but useful predictive relationship between land  
20 use and aquatic habitat protection.

21 Q. When you develop your models and  
22 determine that it is time to give them to the field for  
23 implementation, who do you envisage will be doing the  
24 monitoring of those models once they are actually in  
25 the field being implemented?

1                   A. They are actually concurrent, and in  
2 fact we have been in contact with the field to inquire  
3 about options for having other people collect  
4 information that we need to begin to field test the  
5 monitoring methods.

6                   I lost your question, Mr. Freidin. I  
7 apologize.

8                   Q. I think your response was talking  
9 about the development of the model itself and  
10 collecting data to develop the model.

11                   I am saying once you have developed the  
12 model, you have validated it, and then you give it to  
13 the field for implementation, who do you envisage would  
14 be doing the monitoring?

15                   A. I think it would likely be people who  
16 were in the right place at the right time. That would  
17 likely be operations staff.

18                   The key here is to identify and develop  
19 simple sampling methods that tell you what you want to  
20 know. You need to be indexing something that can be  
21 related back to the reliability of your predictive  
22 tool.

23                   So if we, for example, are doing timber  
24 management planning and we would like to advise the  
25 timber management planners about how much forest can be

1 cut in a basin before the quality of fish habitat is  
2 threatened, to me that is the essence of what this  
3 research program is about. We need to have some  
4 certainty about the quality of the prediction that we  
5 are able to do.

6 Q. Thank you.

7 A. Your second question, Madam Chair,  
8 with regard to spatial variability, and if I understand  
9 your question, it would be something like this; but  
10 because northern Ontario in the area of the undertaking  
11 is remarkably diverse in terrain, climate and  
12 vegetation and geology, that any attempt to predict a  
13 land use activity would be doomed to failure, is a very  
14 important question. In practice what that would mean,  
15 is that the best you can hope for in terms of  
16 predicting the consequences of land use is a relatively  
17 low resolution of prediction.

18 In terms of our activities, where we are  
19 actually now trying to develop those predictive  
20 relationships, it means we probably have to calibrate  
21 the models to the main regions of the province.

22 For example, a management tool that  
23 related the buffer strip width to stream protection in  
24 the clay belt, would likely be different than the same  
25 relationship in the rocky shield near Kenora, for

1 example.

2 So the underlying processes are likely  
3 very similar and quite reliable. For example, you need  
4 to have attacked education between the roadway and a  
5 stream or lake to protect it, but the details and the  
6 quantitative relationships that allow you to design the  
7 buffer width will likely be different.

8 So the point is, is that the important  
9 relationships that determine the linkage of land and  
10 water, as we are concerned here in protecting aquatic  
11 ecosystems from land use, are probably fundamentally  
12 the same across the area of the undertaking. But if we  
13 are attempting to produce very detailed quantitative  
14 predictions linking the two, we are going to have to  
15 have fairly detailed information for each region.

16 Q. Are there any components of the study  
17 that you have described, which in fact address this  
18 issue of extrapolating results from one area of the  
19 province to another?

20 A. That was the main reason we included  
21 the comparative survey element of the research, because  
22 before that was added the research was in danger of  
23 focusing on one or a few areas and having the results  
24 too site specific.

25 Q. If you can just expand a little bit



1 on how that broad scale comparative to survey or  
2 synoptic approach takes into account this concern about  
3 extrapolating results from one part of the province --  
4 or at least one part of the undertaking to the other?

5 A. That work will directly examine the  
6 response of stream and lake habitats to land use in the  
7 different areas of the province that we are concerned  
8 about.

9 So, for example, if clay belt streams are  
10 particularly susceptible to bank erosion following some  
11 kind of timber management activity, then that program  
12 will provide us with the beginnings of the information  
13 we need to locally calibrate relationships.

14 Q. Thank you.

15 MADAM CHAIR: Mr. Freidin, I think we are  
16 getting ready for our afternoon break. Is now a good  
17 time?

18 MR. FREIDIN: I see that Dr. Steedman has  
19 one more slide. If we could just finish that off and  
20 have a break then.

21 DR. STEEDMAN: This last slide finds a  
22 very brief overview of our perspective of the issue of  
23 accumulated effects on the aquatic environment.

24 It is true that any timber management  
25 effect could potentially have an incremental or

1 cumulative effect in some sense to aquatic  
2 environments.

3 To the extent that MNR's Aquatic Effects  
4 Research program was designed to detect the measure  
5 effects at relevant time and space scales, it does  
6 address some key information needs regarding cumulative  
7 effects of timber management on aquatic environment,  
8 and by relevant time and space scales, we mean the  
9 relatively long time scale involved in the experimental  
10 watershed or case study experiment, and relatively  
11 large space scales as captured by the comparative  
12 survey, but also relatively detailed in small space  
13 scales as captured by the sediment transport studies.

14 So MNR's approach here is to apply a  
15 rigorous research program to detect and measure local  
16 and watershed level effects. It is presently  
17 designed -- the study approach will address a number of  
18 potential cumulative effects, but most particularly  
19 sediment and nutrients, but also temperature and  
20 habitat structure through the detection and measurement  
21 of any spatially cumulative downstream effects.

22 A number of the study activities will  
23 involve monitoring in both upstream and downstream  
24 areas subjected to timber management. It will also  
25 provide some opportunities to detect and measure

1 long-term or sequential effects.

2 For example, the comparative survey will  
3 involve selection of study sites where sequential  
4 timber management activities may have taken place, such  
5 as harvest, site preparation and tending, or in some  
6 cases even more than one entry for timber management.

7 That is the end of my evidence.

8 MADAM CHAIR: We will take our afternoon  
9 break now and be back at 3 o'clock.

10 ---Recess at 2:40 p.m.

11 ---On resuming at 3:05 p.m.

12 MADAM CHAIR: Mr. Freidin, we are going  
13 to sit until 3:30 today and then we are going to have  
14 the little scoping session for Panel 5, which I do not  
15 think will take very long.

16 MR. FREIDIN: Q. I guess Dr. Abraham, we  
17 should speak to the Moose Guidelines Effectiveness and  
18 Timber Effects Monitoring Research Program.

19 DR. ABRAHAM: A. Thank you.

20 Madam Chairman, Mr. Martel, like Dr.  
21 Steedman before me, I am going to bring you up-to-date  
22 on the status of the Moose Guidelines Effectiveness  
23 Program, which I may refer to as MGEM from time to  
24 time, and the Timber Effects Monitoring Research  
25 related to moose and moose habitat.

1                   Just to review briefly the material that  
2           was presented to you in Panel 16 of the Ministry's  
3           evidence in-chief, and Exhibit 921, which was a  
4           supplementary description of the MGEM program,  
5           September 1989.

6                   The objectives of the MGEM program are to  
7           measure the effectiveness of timer management  
8           guidelines for the provision of moose habitat and to  
9           measure and predict the effects of timber management on  
10          moose and habitat in the specific activities.

11                  Here I refer to effectiveness monitoring  
12          the way it was defined in Panel 16, but specifically in  
13          interpreted for moose habitat here, to mean that if the  
14          guidelines are effective we would be determining  
15          whether and how applications of the guidelines for  
16          moose provide habitat quality better than that provided  
17          by timber management without application of the  
18          guidelines.

19                  Another way of figuring that, is that  
20          there are greater amounts of important habitat features  
21          in areas that have been managed by according to the  
22          timber management guidelines for the provision of moose  
23          habitat than in areas that haven't been managed that  
24          way.

25                  Referring to effects monitoring, I would



1 simply state, we are looking at the effects of specific  
2 timber management activities on features of the habitat  
3 or indirectly on moose through features of the habitat.  
4 So in this case we can look at more than one level; the  
5 individual level and the population level.

6 In the ESSA workshops that led to  
7 evidence in Panel 16, in which I have lead directly to  
8 the research proposal as we are carrying it out, the  
9 focus has been on intensive studies at the individual  
10 level, answering questions at the level of individual  
11 moose, and that the habitat that individuals use in  
12 making inference to the population effects of that  
13 individual level habitat effect.

14 The aim in looking at effects monitoring  
15 is to reduce the uncertainty where uncertainty is a  
16 significant factor, and those were outlined again in  
17 Panel 16 and I will not go over them again.

18 Turning to the second overhead. The  
19 research is still guided by framework questions that  
20 were posed in that earlier material. To quickly review  
21 them here, we give you some specific examples.

22 The first question, and the first major  
23 task outlined, was to describe the nature of moose  
24 habitat created by timber management with and without  
25 the guidelines.

1                   This is a broad comparative analysis of  
2           the existing habitat of moose across the northern  
3           Ontario range. The purpose is to quantify that  
4           variation from area to area; to do it on a province  
5           wide basis.

6                   The approach as outlined in a few minutes  
7           is something that involves up-to-date habitat analysis  
8           procedures and the use of landscape ecology techniques.

9                   The second major task was having  
10          demonstrated that there are differences in habitats  
11          created by different timber management regimes, how do  
12          moose use, or to demonstrate how moose use these  
13          different habitats. This involves a year round  
14          examination of a large number of moose in different  
15          areas, a detailed analysis of the home range of each of  
16          the individual moose with regard to their use of  
17          specific habitat features and a detailed analysis of  
18          the particular forage which leads to energy available  
19          within that home range.

20                   Within this task also, as I will point  
21          out in a few minutes, there is the scope and latitude  
22          for specific experiments regarding specific habitat  
23          features protected by the habitat guidelines.

24                   This question goes a long way to  
25          answering why the guidelines work or why they may not

1 work, but it is not alone sufficient to do that.

2 The third major task is to demonstrate  
3 how habitat differences and the differences in use,  
4 demonstrated in the second task, affect both individual  
5 and population parameters like health, individual  
6 health and condition, survival and the mortality rate  
7 and productivity both at the individual and population  
8 level.

9 And here the key factors that we are  
10 looking at are the energy balance of individuals, which  
11 allows them to store fat, to use energy for  
12 reproduction as opposed to maintenance and so on. To  
13 look at the interaction between habitat features and  
14 mortality rate, vulnerability to hunting, vulnerability  
15 to credation, amount of time spent in exposed areas and  
16 how those things accumulatively are brought together in  
17 reproductive success, which is one of the key factors  
18 that has to be measured if we are going to look at  
19 effectiveness of management activities.

20 We might have a larger number of animals;  
21 they may be in poorer condition. One could question  
22 whether that was effective management. What we are  
23 also looking for is highly productive success in areas  
24 managed according the guidelines and high contribution  
25 to future generations of animals.

1                   The fourth major task, which is really  
2           somewhat above the other tasks in terms of its scope,  
3           is looking at the overall contribution of the habitat  
4           guidelines to the Moose Management Program and here we  
5           are talking about the key words integration and  
6           synthesis and specifically asking the question, how  
7           should the habitat management program and the  
8           population management program be integrated.

9                   I can refer you to Dr. Euler's two six  
10          notes and this phase, this aspect of the research  
11          design, this is what we are talking about. How do you  
12          bring those two things, both to bear, on the overall  
13          Moose Management Program.

14                  We have chosen to do that up front and on  
15          a continuous basis by the use of strategic research  
16          models and specific research models leading to  
17          operational models that will be implemented in the  
18          field.

19                  A key point here is that we are not  
20          looking at just a single factor, such as habitat or  
21          predation. We are looking at all factors  
22          simultaneously.

23                  Just before leaving this, I would like to  
24          remind the Board that considerable amount of Ontario  
25          expertise from the field, from the research branches,



1 were brought to bear in the initial ESSA workshop  
2 procedures and in the construction of the initial  
3 research design. So that we have already, in some  
4 sense, taken the information that is available from the  
5 scientific literature and focused it with expert  
6 opinion from Ontario.

7 Moving to the next overhead. There are  
8 some design changes from Panel 16, but they are, in our  
9 opinion, minor.

10 There are only two, and the first one is  
11 that in constructing the method of approaching the  
12 major task, what is the nature of moose habitat created  
13 by different timber management regimes, it became  
14 obvious to us that what we were really doing was  
15 measuring the impact at the landscape level of the  
16 timber management regime. It is at that level that  
17 moose are affected both from a population and from an  
18 individual basis, primarily because of their large home  
19 range. It was not lost on us that when we were looking  
20 at the landscape level impacts of defined guidelines in  
21 the terrestrial environment, that we were really  
22 developing methods that recognized commonality over all  
23 wildlife needs, across all wildlife groups, and you  
24 will see that reflected in the specific details of the  
25 components at the MGEM program.

1                   Our first step was to try to quantify the  
2                   guidelines. One of the criticisms that Dr. Quinney of  
3                   OFAH has levelled at the program for moose guidelines,  
4                   is that he does not believe that the long term  
5                   longitudinal research program that, in his  
6                   interpretation that we have engaged in, will deal with  
7                   the local site variability and that the guidelines, in  
8                   his opinion, were not specifically quantifiable.

9                   Now, we consider that question at the  
10                  beginning of the program, and indeed the guidelines as  
11                  written had a number of questions related to them, in  
12                  terms of their quantification. So that was the first  
13                  task that we set out to do.

14                 There are specific statements, in terms  
15                 of the amount of kinds of habitat, the distribution of  
16                 the kinds of habitat, the very simple straightforward  
17                 posture that is in the guidelines, as they are written,  
18                 which we needed to quantify in a way that was then  
19                 comparable between the areas, and that's, as I've said,  
20                 I will mention that in some detail when I talk about  
21                 the habitat analysis component of the research.

22                 The second minor design change is the  
23                 order in which the components to the program has been  
24                 implemented or are being implemented.

25                 One of the hallmarks of the original

1 proposal was an intensive radio marketing study for  
2 some fairly large numbers of moose in areas managing  
3 different ways. That is an expensive proposition to  
4 begin, and particularly expensive to maintain large  
5 scale monitoring all over broad geographic areas at the  
6 frequency which it was deemed necessary to get the  
7 questions or get the answers, are approaches then  
8 before we engaged in that phase of the research.

9 We want to be certain that we have looked  
10 at the most significant uncertainties left in cause  
11 effect relationships and so that our approach to that  
12 has been to develop habitat and population models with  
13 a number of very specific predictions that can be  
14 tested using the vehicle of intensive radio marketing  
15 program.

16 To some extent we have also been spending  
17 time in the telemetry field trying to develop some  
18 up-to-date or state-of-the-art telemetry equipment  
19 which will give us a high resolution in answering these  
20 habitat questions.

21 The overall approach of the MGEM program,  
22 and the Ministry respective, is very similar to the  
23 aquatic effects monitoring program that Dr. Steedman  
24 just outlined.

25 We are attempting to increase knowledge

1 about the causal mechanisms in the timber management  
2 habitat animal interaction sequence. But there is a  
3 large amount of information available in form of  
4 correlations as opposed to cause and effects, and here  
5 Dr. Quinney, in OFAH, in my opinion, are wrong to some  
6 extent in specifying that their models and that their  
7 approach uses cause effect relationships and we can  
8 come back to that in a moment.

9 But what I want to strongly emphasize  
10 here, is that the type of research that we are doing is  
11 aimed at reducing the uncertainty and further  
12 elaborating cause/effect relationship as opposed to  
13 identifying correlations. The key difference being if  
14 you have correlations and you manage on the basis of  
15 correlations, then when the management outcome is other  
16 than you had expected, you are not certain why that  
17 outcome has occurred, you only know that your  
18 correlation was not strong enough.

19 The second point here is that we are  
20 using a mixture of scientific methods. We are using  
21 broad scale comparative methods using, for example, the  
22 landscape ecology analysis of the landscape level  
23 effect of timber management across the range. We are  
24 also using experimental approaches. In this case, an  
25 example would be looking at the specific features of



1 protection of standing of vegetation around aquatic  
2 feeding areas, which are a necessary component of the  
3 summer habitat of moose, but manipulating, through  
4 experiments, which are narrowly focused on that  
5 feature.

6 Broad is meant here to refer to broadly  
7 geographic, that is the entire range. Narrow is meant  
8 here to refer to starting in one intensive study area,  
9 developing the research and some relationships and  
10 applying that through inference to other areas.

11 We are always trying to account for the  
12 key amount of habitat factors. That is something that  
13 is overlooked and perhaps oversimplified in the fact  
14 that because it is there, our moose habitat guidelines,  
15 provision of habitat for moose, it is sometimes  
16 forgotten that in Panel 16 and in the ESSA workshops,  
17 it was quite clearly elaborated that all of the factors  
18 necessary to moose management must be considered  
19 simultaneously. At least by accounting for variation  
20 in differences among areas.

21 Again, I would refer to what OFAH  
22 described as local effects monitoring where they  
23 indicate, in a couple of different places, that we are  
24 already collecting the kind of information that is  
25 necessary for effects monitoring.

1 I would disagree with that point. There  
2 are only a couple of kinds of information about moose  
3 that we are routinely collecting and those not always  
4 at the appropriate time scale or the appropriate  
5 spatial scale; those being population measurements  
6 which are done every 2 to 3 to 4 years in the  
7 individual wildlife management units, and human harvest  
8 measurements which are done on a wildlife management  
9 human basis annually in most locations.

10 But aside from that, the factors which  
11 are very significant, or potentially very significant  
12 in terms of disease, in terms of weather factors, are  
13 not being simultaneously collected on a routine basis  
14 in the Ministry of Natural Resources.

15 The mixture of methods allows us to be  
16 adaptive on an ongoing basis in the design of the  
17 research and the implementation of the research. We do  
18 not think that this mix of methods and approaches is  
19 what could be characterized as a traditional  
20 longitudinal research study, with results taking up to  
21 20 years to be forthcoming. I think Dr. Quinney, in  
22 Panel 4 of OFAH's evidence, one of his answers refers  
23 to a 20 year study.

24 In fact, the 20 year study longitudinally  
25 was rejected by the ESSA group, by the workshop. It is

1 specifically in favour of a study with a shorter time  
2 frame, but with sufficiently large sample sizes of  
3 great or large moose and comparing, in a comparative  
4 framework, the characteristics of the individuals and  
5 populations between areas managed in different ways.

6 I am not sure how that reference keeps  
7 coming up to long-term, longitudinal studies which  
8 results at the end. That is certainly not our  
9 approach, and I think that can be demonstrated.

10 So moving on --

11 MADAM CHAIR: Dr. Abraham, what is the  
12 timetable now for this research.

13 DR. ABRAHAM: We are looking now -- well,  
14 initially we indicated an 8 to 10 year time frame and  
15 due to economic conditions in Ontario, at the present  
16 time, we are making progress at a slightly slower pace  
17 than we anticipated, chiefly in the area of the radio  
18 telemetry, implementing the radio telemetry program.

19 There is also the complicating factor  
20 that depending on how many times or how much inference  
21 you can make from one rigorous set area, which I am  
22 getting to, to the regional ecological regions in  
23 Ontario where there is some variability.

24 You may want to have overlapping or  
25 sequential research in at least two areas. Originally

1       it was thought to be ideal to have research in at  
2       least -- similar research in about four areas. The  
3       proposal that received cabinet approval and which you  
4       have seen, is one that has research being done  
5       similarly, similar research, in two different areas;  
6       one representing the northwest of the province and one  
7       representing the broader more humid north east.

8               In fact, right now we are implementing  
9       the rigorous approach in one study area, in north west  
10      of the province and again, it is mainly an economic  
11      decision at this point.

12             At full implementation levels we do  
13      intend to replicate though, the intensive rigorous  
14      study in a location in the north east which is yet to  
15      be determined.

16             MR. FREIDIN: Madam Chair, you will note  
17      that the last slide of Dr. Abraham does refer to  
18      interim products which will be deliverable during the  
19      currency of the program addressed in -- that Dr.  
20      Abraham deals with one, partially addressed your  
21      question or more wholly addressed your question.

22             DR. ABRAHAM: I would like to mention  
23      that the location of our rigorous study area, rigorous  
24      research study area, is between Fort Frances and  
25      Dryden, in the northwestern portion of the province.



1 It is approximately 60 kilometres by 60 kilometres in  
2 dimension, which is about 360,000 hectares.

3 Within that area we have large and  
4 contiguous areas of habitat for moose created by  
5 different conditions.

6 Historically there were some fairly large  
7 contiguous clearcuts over a time span of about 15 to 20  
8 years, so we have temporal variability within the  
9 resulting regenerating forest of about that time span,  
10 and it is over a fairly large area of about 30  
11 kilometres by 20 kilometres.

12 In the same forest type, and not very far  
13 away, essentially another road system, which is not  
14 communicating with that one, is a large area that was  
15 back in the beginning of 1978, was harvested in a  
16 dispersed way with a large infrastructure of roads and  
17 a tree pattern spreading out the harvest allocation in  
18 blocks that approximate the guidelines as they were  
19 written in 1986, 1988, and the average cut block size  
20 there and disperse patches, using the clearcut method,  
21 is about a hundred hectares or one square kilometre.  
22 But its equivalent size, geographic area, as the  
23 contiguous area and is harvested over the same time  
24 period.

25 So by controlling through the time

1 periods over which the harvest and regeneration has  
2 occurred we can have some -- one of the better  
3 comparative approaches between the guidelines and the  
4 non-guidelines approach.

5 In addition to that, intervening between  
6 them is an area of about 75 years age post prior  
7 disturbance in the same forest type. So we have an  
8 unlocked habitat.

9 And the amount of degrees of road in the  
10 area is also a key factor that differs and which is  
11 quantifiable.

12 So that is the study area which had the  
13 greatest potential for letting us answer questions as  
14 they were posed in the original framework, and that is  
15 where we have chosen to begin our work.

16 To do this kind of research, at this  
17 scale, while acknowledging that this study area is not  
18 representative of the clay belt, for example, in the  
19 northeastern part of the moose range, we feel that the  
20 acknowledgment of the fact that there are ecologically  
21 similar regions, at least limits the demands of how  
22 often and how many places we have to do this kind of  
23 intensive research, we do not believe, as the OFAH has  
24 put forward, that you need do that at every forest  
25 management unit level.

1                   In the cross-examination during Panel 4,  
2 of Dr. Quinney, Mr. Freidin discussed in detail the  
3 amount and types of data that would need to be  
4 collected.

5                   We do not think that -- again,  
6 acknowledging what was said in the Panel 16 and the  
7 ESSA workshops that the resources necessary to do this  
8 kind of information collection and refinement of  
9 management models, is beyond the resources of  
10 individual districts.

11                   It is not beyond reasonable resources in  
12 individual districts to collect the information  
13 necessary to be input into the models and to allow them  
14 to make the management decisions at the local level on  
15 a continuous and ongoing basis. Our aim is to deliver  
16 to the field the models, the tools, with which they can  
17 input information that they will collect on a rigorous  
18 way into, and make their own management decisions.

19                   So we are not an attempting in our  
20 monitoring approach here to replace local management or  
21 local adaptive monitoring of population or habitat or  
22 other key factors. That is the component of the  
23 overall management strategy.

24                   What we are saying, is that before it's  
25 appropriate to do that, before it's appropriate to

1 spend a lot of time gathering a lot of information  
2 which may be unnecessary or unimportant, we need to do  
3 this scale of research first.

4 As I have described the study area, I  
5 think other people on the panel would agree with me  
6 that the spatial dimensions of the research area that  
7 we are talking about is equivalent to the spatial  
8 dimensions of an allocation or a five year operating  
9 plan, and those things are doing research at the same  
10 spatial dimension as management occurs. Also an  
11 important part of practical applicable science.

12 We have talked in various places about  
13 making observations of one or a few factors without  
14 simultaneous measurement of other key factors, and that  
15 this would be an inefficient way to reduce uncertainty.

16 As I said, we are not are routinely  
17 collecting all of the kinds of information that might  
18 be necessary, and in fact I can give you one example of  
19 using what I think are the two factors that OFAH  
20 proposes that we collect on a regime basis, and that is  
21 population size and harvest, human harvest.

22 A recent analysis of the management units  
23 of the northwestern part of Ontario, with regard to the  
24 harvest, selected harvest system that was introduced  
25 back in 1983, indicated that despite significant



1 differences in population density, habitat type, and in  
2 fact even the occurrence of human harvest between an  
3 area to the west of Thunder Bay, around Terrace Bay and  
4 Isle Royale National Park in Minnesota, indicated that  
5 all three were exhibiting similar patterns in  
6 population increases and declines over the 1980s  
7 despite the fact that there is no hunting on Isle  
8 Royale. There are wolves but no bears on the other  
9 areas, on the mainland of Ontario, different management  
10 strategies in terms of human density and in terms of  
11 harvest.

12                 Despite all those other factors, there  
13 were similar patterns of increase and decline of moose  
14 populations. This indicates to us that, and both these  
15 were analyzed with simply those two kinds of  
16 information, the author ended up speculating that it  
17 was weather related or perhaps a parasite/tick related  
18 phenomenon which were similar over that decade in the  
19 1980s, having a supra area effect. And in my mind that  
20 is an example of where we have been collecting  
21 information, but it was insufficient to provide an  
22 answer as to cause of population changes.

23                 MR. FREIDIN: Q. Just for the record, so  
24 it is absolutely clear, Dr. Abraham, you are talking  
25 about harvest; the harvest of moose.

1 DR. ABRAHAM: A. The harvest of moose,  
2 that is right. Dealing with the harvest of moose.

3 The last point I mentioned in this  
4 overhead was studies for ecological regions needed to  
5 calibrate models for implementation.

6 I do not mean here that we would need to  
7 repeat this study everywhere at the same scale. What I  
8 mean here is that the parameters in the cause/effect  
9 relationships, for example, the relationship that more  
10 young are produced in areas with a higher degree of  
11 interspersions of habitat A and habitat B, for example,  
12 or winter habitat and aquatic habitat. That  
13 relationship is capable of being extrapolated or  
14 inferred from one area to another. But the exact  
15 amount, the absolute numbers that would need to be  
16 input into the model to make the kind the relationship  
17 in terms of the number of moose expected from the  
18 particular degree of interspersions may well be  
19 different between the clay belt in the northeast or the  
20 northwestern Ontario lakes region.

21 So the studies needed in ecological  
22 regions are really needed to refine the range of inputs  
23 of variables rather than to redefine what the  
24 relationships are.

25 Notwithstanding that, there may be

1 significant new relationships in an area where aquatic  
2 result requirements are supplied by aquatic feeding in  
3 one area, but are not available or aquatic areas are  
4 absent or not a significant component of habitat  
5 somewhere else. It could be that salt requirements are  
6 obtained by the salt mineral licks or from a particular  
7 kind of vegetation that isn't an aquatic vegetation.

8 So there are those kinds of things that  
9 might change from area to area, but we think it would  
10 be the exception rather than the rule.

11 Just to summarize a little bit about how  
12 I feel, our overall approach deals with the OFAH  
13 criticisms. They indicate that the longitudinal study  
14 would be too long, and I would refute that by saying  
15 that there are and will be ongoing products, and I will  
16 come back to that point.

17 They're also indicating that we would not  
18 learn anything new by the kind of research that we are  
19 doing in terms of the effectiveness monitoring, and in  
20 order for me to accept that statement from Dr. Quinney  
21 and the OFAH, one would have to suggest that nothing  
22 that they have proposed in terms of the application of  
23 information or science from other areas to Ontario, is  
24 relevant.

25 To be blunt, you take away a significant

1 tool and considerably important and valuable tool of  
2 science, if you do not allow yourself to examine, in a  
3 rigorous way, the cause/effect relationships through  
4 hypothesis testing and then allow yourself further to  
5 make an inference based on that result to a new area  
6 for at least the beginning of the management or new  
7 science approach.

8 It is true that scientists want to always  
9 find more information, but I think that it has to be  
10 acknowledged that you can make progress within that  
11 framework. That it is not a question of never having  
12 anything new. If that were the case, the guidelines  
13 would not have been written in 1988. It could have  
14 been written in 1944. Obviously they weren't, and much  
15 of the information in them was of very recent origin at  
16 the time that they were written.

17 MADAM CHAIR: Thank you, Dr. Abraham.

18 I think we are going to stop for today  
19 and we will pick up with you tomorrow morning. Thank  
20 you very much.

21 Thank you, gentlemen. We are just going  
22 to be a few minutes doing some procedural things. You  
23 are invited to stay but you can go as well. Thank you.

24 Mr. Freidin, this is going to be our  
25 shortest scoping session on record, I think.



1 I understand from Mr. Pascoe, that the  
2 parties will not be submitting statements of issue.  
3 Those parties who wish to cross-examine Panel 5 will  
4 not be submitting those statements until July the 20th?

5 MR. FREIDIN: Mr. Lindgren has advised  
6 that he will provide me with one by the end of the week  
7 and I am sure the Ministry of the Environment can keep  
8 up with that schedule.

9 MS. GILLESPIE: That is the first I have  
10 heard of that date. I think we can probably do better  
11 than July 20th, but I do not think we can do as well as  
12 FFT and give it to you by the end of this week.

13 MADAM CHAIR: In any event, we do not  
14 have those statements today, but we wanted to see if  
15 there were any problems that the parties were going to  
16 raise with respect to this reply evidence.

17 We will be back on Tuesday August the 4th  
18 to hear more reply evidence, and I think we will  
19 probably still be in Panel 3 or maybe we will be in  
20 Panel 4 at that point.

21 MR. FREIDIN: Except for Dr. Wagner, we  
22 better not be in Panel 3, because none of the witnesses  
23 will be here. So we are fairly confident, based on  
24 some estimates and recommendations we will finish Panel  
25 3 this week.

1 MADAM CHAIR: Thank you, Mr. Freidin.

2 Mr. Martel and I have gone through the  
3 Panel 5 written evidence carefully, and we do not have  
4 any questions or clarifications. It seems to be very  
5 straightforward to us and we think we can move through  
6 it fairly quickly in evidence in-chief.

7 It seemed to be different, and you might  
8 want to give us some explanation, Mr. Freidin. It  
9 seemed to be a different approach to the reply  
10 evidence, certainly than the other four panels, and  
11 deals particularly with very specific summaries of what  
12 the other parties have had to say in any particular  
13 issue, and it sounded argumentative in that sense, that  
14 you were setting out the positions of the other  
15 parties and then putting out MNR's position on those.

16 MR. FREIDIN: Reply evidence is intended  
17 to in fact specifically address specific things that  
18 other people have said. So what you see there is  
19 really nothing unusual in terms of reply evidence.

20 If you recall, however, this panel is a  
21 little bit different than the others, in that it is the  
22 one which specifically responds to specific suggestions  
23 made by the other parties in the terms and conditions.  
24 So it was the only -- it is by necessity it has taken  
25 the form that it has.

1                   MADAM CHAIR: Mr. Lindgren or Ms.  
2 Gillespie, do have anything you wanted to ask Mr.  
3 Freidin at this point or inform the Board with respect  
4 to this panel, your client's participation?

5                   MR. LINDGREN: Well, Madam Chair, we will  
6 be participating. We will be cross-examining on Panel  
7 5.

8                   I have indicated to Mr. Freidin, at this  
9 point, the primary focus of the cross-examination will  
10 be on the site productivity and nutrient loss section  
11 of the evidence.

12                   Predictably we will be cross-examining on  
13 the tab 3 critique of FFT silvicultural guidelines and  
14 maybe some other secondary issues, but I do not expect  
15 that my cross-examination exceed two hours.

16                   MADAM CHAIR: Thank you. Ms. Gillespie.

17                   MS. GILLESPIE: Madam Chair, our time  
18 estimate is similar to Mr. Lindgren's. We do not  
19 expect to exceed two hours in cross-examination on  
20 Panel 5.

21                   MADAM CHAIR: Do we know if any of the  
22 other intervenors will be cross-examined? Ms.  
23 Blastorah.

24                   MS. BLASTORAH: We have not heard from  
25 any of the others that I am aware of. We still have

1 not heard from Mr. Hanna, or the OFAH/NOTO Coalition.  
2 We have not yet received their revised terms and  
3 conditions. So I have no information at this time and  
4 I can only anticipate that they will not be involved  
5 based on the comments of Mr. O'Leary. You may recall  
6 at the last scoping session, but of course that is  
7 subject to further comments from them.

8 MR. FREIDIN: I have spoken to Mr.  
9 Cassidy, Madam Chair. He advised that he may be  
10 requesting the Board leave to cross-examine on Panel 5  
11 and perhaps even Panel 4, but it has not happened yet,  
12 but he has indicated that that is a possibility. He  
13 did indicate that he does not need to be lengthy in any  
14 event.

15 While I have got the mike on, I wonder  
16 whether MOE can advise what subject areas it is most  
17 likely to be cross-examining on.

18 MS. GILLESPIE: Well, I will advise you  
19 as soon as I can, Mr. Freidin. I am not prepared to  
20 advise you today.

21 MS. BLASTORAH: And, Madam Chair, Mr.  
22 Pascoe has reminded me that perhaps it would be wise to  
23 just clarify so we are all working to the same  
24 schedule.

25 I had consulted with him about the



1 schedule after we lost a week there, and just to make  
2 sure that everybody was aware what order the witnesses  
3 would be called in as a result of witness availability.  
4 By letter of June 15th to the parties and the Board, I  
5 advised that after consultation with Mr. Pascoe, Dr.  
6 Wagner, as Mr. Freidin has already mentioned, will be  
7 available to give his evidence and be cross-examined on  
8 August 4th, and we don't anticipate any problem with  
9 keeping his evidence to that one day.

10 Due to witness availability, we will then  
11 be presenting Panel 5, prior to Panel 4, and I think  
12 everyone should be aware of that, but just to make sure  
13 that is the case.

14 MADAM CHAIR: All right.

15 Is there any other business to take up  
16 today? All right, we will see you tomorrow morning  
17 then at 8:30.

18 ---Whereupon the hearing was adjourned at 3:45 p.m., to  
19 be reconvened at 8:30 a.m. on Tuesday, June 23,  
20 1992.

21 I hereby certify the foregoing to be a true  
22 and accurate C.A.T. (Computer-Aided  
23 Transcription) record of the proceedings  
24 to the best of my skill and ability.

25 -----  
Carla Miller, C.S.R.

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